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A FOREWORD

CARROLL D. HILL†

The Union Memorial Hospital, founded in 1854 as the Union Protestant Infirmary "for the relief of the indigent and friendless sick," has evolved from the humble origins common to all such private charitable institutions one hundred years ago.

In the earliest days, the hospital was essentially the last resort for the sick, a doubtful refuge for the homeless and the poor. Patients with acute illnesses were generally treated at home. But during the last century, the bleak custodial institutions of the nineteenth century have been changed into modern community health centers as a result of vast social change.

Today, the private general hospital mobilizes the professional and technical skills for the safe and efficient care of its patients. Its main mission is centered on the welfare of the acutely-ill bed patient, but it also houses the specialized equipment and the trained personnel to accomplish countless other community services.

The modern hospital is the place where the physician treats his patients, using a wide range of complex services that cannot be obtained elsewhere. The hospital is also the educational center for the nation's professional and non-professional staffs—physicians, nurses, dietitians, medical librarians, radiologists, laboratory technicians and others no less essential to the health service team. The hospital is likewise the focus for much of the nation's basic medical research, where new diagnostic and therapeutic measures can be evaluated on the basis of clinical studies. And, more than ever before, the private general hospital is a vital agency for general community health, with its extensive out-patient clinic, its social service departments, its accident room facilities and public health programs. Typically, the private hospital today performs all of these functions for the community it serves.

Here in Baltimore, according to the current Hospital Survey and Plan developed

* The "Articles of Interest" and the "Scientific Papers" are some of the addresses delivered at the Scientific Program Commemorating the One Hundredth Anniversary of the Union Memorial Hospital, 1854-1954, on November 5 and 6, 1954, at the Union Memorial Hospital, Baltimore, Maryland.

† Director, Union Memorial Hospital

A Foreword

under the sponsorship of the Department of Health of the State of Maryland, no less than 81 per cent of the hospital beds available to patients with acute illnesses are provided by private institutions, as opposed to municipal and state hospitals. This comparison serves to underscore the important role which private general hospitals play in our own community.

The Union Memorial Hospital, whose centennial this issue commemorates, is proud of its progress over the years, but mindful that the transition is not complete. New medical discoveries, as well as dynamic social and economic forces, will continue to reshape the functions and the purposes of private hospitals in every community. There are many difficult problems still to be solved.

*Union Memorial Hospital
Baltimore 18, Maryland*

HOUSE STAFF GATHERING DATA ON AID TO MEDICAL SCHOOLS**The AMA Washington Letter, No. 84-86**

Acting at the direction of the full committee, the staff of the House Interstate and Foreign Commerce Committee has sent letters to more than 50 organizations asking for factual data bearing on federal aid to medical education. The information is being gathered as a preliminary to hearings in the next Congress. The committee ordered the study prior to adjournment of the last Congress.

"In accordance with these directions, the committee staff is seeking at this time background facts with respect to the financial needs of medical schools and the supply of and demand for medical school applicants rather than arguments intended to support or oppose any particular form of federal aid," the staff letter stated.

Other information sought by the staff: (1) trends in supply of applicants, including expected numbers of college graduates, (2) admission policies, (3) cost to medical students, (4) numbers of medical school graduates, present and prospective, (5) licensure of graduates of foreign medical schools, (6) net increment of graduates in relation to population, (7) examples of unmet demands for professional personnel in public programs, institutions, professional specialities and rural areas, (8) effects of medical school financing on university financing, (9) expansion plans of individual institutions, and (10) state, regional and nationwide private programs for helping schools and students.

ARTICLES OF INTEREST

THE RÔLE OF THE GENERAL HOSPITAL IN THE TRAINING OF THE DOCTOR

HARVEY B. STONE, M.D.

Baltimore, Maryland

The present is a time of active interest in all phases of education. Medicine comes in for its full share of such interest, in fact it is one of the fields where inquiry and experiment are in a state of vigorous fermentation. Premedical education, the medical school itself, and graduate and post-graduate education are all parts of the training of a doctor that are the subject of widespread and earnest discussion. In dealing with this subject as a whole, one realizes that the education of a doctor, as distinguished from that of many other callings, begins with college work of a pre-medical character, and continues throughout the active life of the individual. For medicine itself is a constantly growing, changing discipline and he who relaxes his pursuit of it is soon no longer fully competent.

We are gathered here to-day to celebrate the one-hundredth year of an institution that is primarily designed for the care of the sick and injured, but that nevertheless is also an agency of medical education, and it is to that phase of its service that I would give brief consideration.

To begin with, it is well to point out two separate types of medical education that are named somewhat alike, that both deal with the training of the doctor after his medical school course is successfully completed, but that are really quite different in purpose and character. These two types are called respectively graduate training and post-graduate education. Without spending too much time on the matter, graduate training is a period of prolonged devotion to the acquisition of advanced and specialized knowl-

edge in some particular field of medicine. This training is spent nearly always in a hospital, under the tutelage of a group of men recognized as competent in their own fields, and includes the opportunity for personal experience and responsibility, under guidance, in the performance of the various procedures in that field. It usually, nowadays, means a course of three to five or six years, entirely given over to this training. In contrast, by post-graduate education is meant relatively brief periods of a few days to a few weeks given to a "brush-up" or refresher series of lectures or clinics. These are attended by groups of doctors, and there is no sharing by those who come as pupils in the actual work performed. One need not perhaps go any further in the effort to contrast these two forms of education for graduate doctors. This talk will deal only with graduate training proper, which we know familiarly as the intern-resident system.

What is the rôle of the general hospital in graduate training of the doctor? Briefly it may be described as being a combination of what the work-shop means in the training of the artisan, what the laboratory means in the training of the scientist, and what the medical school means in the undergraduate study of medicine. There are those who draw a distinction between education and training. Such a distinction may have its uses, but in the field of medicine I believe that all true education includes training and that all training has also educational value. I believe that learning to perform the mechanical steps of a clinical test, or an appendectomy cannot be

complete without also learning why such steps are necessary—which is education. Also I believe that the abstract study of the reasons for the steps in the technique of appendectomy or laboratory work without the actual *performance* of these processes is only incomplete and inadequate education. It is my further belief that the modern general hospital furnishes an excellent example of the necessary combination of practical training with instructional teaching that constitutes true education.

It would be interesting to trace the history, relatively short, of the development of modern graduate training in the hospitals of the United States, but this is hardly the occasion for such an ambitious undertaking. It is, however, very appropriate to point out certain facts of great local interest in such a history. For instances, there is no question that the typically American residency system started here in Baltimore, at The Johns Hopkins Hospital, and has spread from here, with minor modifications, all over the country. It is also probably true that this hospital, the present Union Memorial Hospital in the guise of its predecessor, The Union Protestant Infirmary, was the first non-university general hospital to adopt and develop the residency system of graduate training. To substantiate this, one may recall that when The Johns Hopkins Hospital found it had no room in its surgical residency system for all of its own interns who had finished their year of service, Dr. J. M. T. Finney, Sr., who was an associate professor of surgery in The Johns Hopkins Medical School and also very active on the surgical staff of The Union Protestant Infirmary, invited some of these young men to become the first residents in the surgical service of this hospital. The names of some of these men are William A. Fisher, John Staige Davis, and Omar Pancoast. From that start grew the present full-fledged and well developed residency system with which we now are familiar. In view of this historical primacy it may be appropriate to consider briefly on this occasion the part that a general hospital without

direct university affiliation may perform in the training of doctors.

To start with it may be said that such a hospital can render much the same services as a university hospital, but that it is not able to give all the advantages of a university hospital. On the other hand it does offer certain kinds of opportunities not always found in university hospitals. To be specific, consider the following.

Either of these types of hospitals, when properly provided with adequate clinical material and a competent senior staff, may offer to its interns and residents opportunities for the close and careful study of all the usual medical conditions and for many of the rarer ones also. This study will include instructional teaching by the seniors. It will afford the opportunity to follow the course of disease at first hand and for protracted periods. The service will include the assumption of considerable authority and responsibility of a personal nature in the handling of assigned cases, of course under proper support and guidance by the visiting staff. Such a course of training, from the proper taking of a history to the personal performance of difficult major surgery is training *and* education in the best sense and fits the resident to begin his life work with safety to his patients and satisfaction to himself. He will, of course, continue to study and strive to improve himself as long as he lives, but his residency has given him a firm and broad foundation to build on.

It has been said above that there are some advantages offered by the university hospitals that the others cannot provide, at least to the same degree. The university hospital staff is usually more effective in instruction, since they are all teachers. Be it noted, however, that so far as The Union Memorial Hospital is concerned, this difference is negligible, since most of its staff are also medical school teachers. It may not be improper also to note that because a man holds the rank of a teacher in a university medical school does not infallibly indicate that he possesses among his endowments the quality of being a successful teacher. There are competent

research men and excellent clinicians who lack the power of clear exposition and the ability to stimulate curiosity and enthusiasm. However, on the whole the university hospital may be expected to excel in strictly instructional functions. Among its other favorable features are the holding of regular and frequent clinics, meetings and demonstrations, the visits of distinguished personalities, the early acquisition of new apparatus, and the testing and indeed the introduction of new ideas and methods. In some of these matters the non-university hospitals can scarcely compete.

It is the belief of the writer, however, that there are compensating factors that go far to equalize the balance toward the side of the non-university hospital. Most of these factors are of much greater importance to those residents who look forward to a career of medical practice than to those desiring an academic life, but again it is the belief of the writer that the academically-inclined man *particulary* needs these factors as he is to live in an atmosphere that often suffers from the lack of them. What are these factors? They may perhaps be grouped under the general term of human relations, and they are qualities that are not so much to be learned by formal instruction as by observation, and perhaps unconscious absorption from the general atmosphere of an institution. They include many things. First and foremost is the concentration of effort to encourage, cheer and stimulate the patient to get well and make him believe that he will. Long before there was talk of psychosomatic medicine, this was a fundamental part of the healer's art and some of the circles that regard psychosomatic medicine as a great discovery simply have found out and named something that every good physician before and since Hippocrates has abundantly utilized whether he realized it or not. Next to the patient in human relations importance comes his family. Not only the ill wife but the frantic husband and frightened children, and the concerned other relatives need to be helped. They should be dealt with not only kindly but intelligently—warned

what not to do, told as much of the true facts of the case as their relationship to the patient warrants, and enlisted as part of the team working for the patient's recovery. The share of the family doctor must not be forgotten nor overlooked. He has the interest of the patient as much at heart as the specialist—probably more so—and will no doubt be responsible, at least in part, for the very important after-care when the patient leaves the hospital. He should know all about the things that have been learned and done in the hospital, the various studies, reports, operations and treatments, with their results. How otherwise can he also cooperate effectively as a very necessary member of the team? In many cases there are other relations of the patient that need to be considered. His return to work is a question that the doctor often has to settle. If there are business or public matters in which the patient plays a part, the doctor must learn to move with tact and discretion.

All these things are fairly easy to catalogue, but there are other vital factors so much dependent on temperament and attitude that they are easier to learn by observation than to teach by instruction. The very way the doctor walks into the sick room may be more curative than the medicine he orders. The way he holds the patient's hand when feeling the pulse may convey the assurance he wishes the patient to have, or if he himself is frightened and worried the patient may sense it. The doctor who himself possesses a belief and a view of life that gives him courage, security, and calmness, in some manner often can convey these qualities to his patient, and may thus turn the scales to a victory that before was doubtful. These are some of the qualities that can be felt and learned in a service such as that of The Union Memorial Hospital. Whoever doubts the reality or importance of these qualities shows himself ignorant of a very basic factor in the art of medicine.

One may ask why the idea is advanced that this aspect of medical training is better developed and better transmitted in the superior non-university hospitals than it is in the university

hospitals. I think, first, that this difference does exist, and second, that there is a reason for it.

The primary purpose of the university hospital is the study of disease, the extension of knowledge of disease, and the teaching of the results of these studies and researches to students and residents. In other words, the emphasis is on the intellectual pursuits of study and instruction. It is not implied that the care of individual patients is neglected, but it is subordinated to these other functions. On the other hand, the whole primary purpose of the non-university hospital is the care and treatment of the individual patient. Such research and teaching as is done is incidental and while important and sometimes outstanding, it is not the first responsibility of the institution. It is not to be assumed that there is anything derogatory to either the university or the non-university type of hospital in making these assertions as to the different functions that they respectively subserve. It is, however, essential in appraising the value of these two kinds of hospitals that offer graduate training to realize that each has certain differences from the other in addition to the features that they have in common. At present there is a widespread effort being made to enhance the instructional facilities of the non-university hospitals. This takes the form of better staff organizations, more formal rounds, clinics and conferences, and closer scrutiny of the records and laboratory work of the interns and residents. There can be no objection to a movement that should add strength and value to the graduate training programs of these hospitals. It is to be hoped, however, that these changes be not allowed to change the emphasis upon the primary importance of the care of the patient, of the human relations of medical practice, and of the fact that medicine is not only a science, but

before it became a science and still today it is an art, an art in which the medium dealt with is human health and human life. It would not be anything but an improvement if there were a companion movement to re-emphasize this fact in the training programs of some of the university hospitals.

In appraising the role of the private general hospital in the training of doctors, two further facts must be mentioned. The first of these becomes self-evident from a brief consideration of certain statistics. In the United States last year there were thirteen hundred and forty-seven hospitals approved for intern training, or resident training, or both. Not much over a hundred of these are properly to be regarded as university or medical school hospitals. The remainder consists of government institutions—Federal, State, or local—and private hospitals. It is quite clear what a heavy share of this teaching load the private hospitals carry. Last year there were eight thousand, two hundred and seventy-five interns and eighteen thousand, six-hundred and nineteen residents, of whom many thousands were being trained in private general hospitals like this one.

The second factor to be emphasized is the value of the private hospital in the continuing education of its visiting or senior staff. The men who assist in the training of interns and residents are being kept up to the mark themselves. Not only does the hospital provide what often is called a work-shop for its attending doctors; it also provides them with a life-long school. Most of us gathered here today are beneficiaries of this function of the modern private hospital, and we should be and, I hope, are duly grateful for it.

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DR. J. M. T. FINNEY AND THE UNION MEMORIAL HOSPITAL

FRANK C. WILSON, M.D.*

It was indeed a great honor to be invited and a great pleasure to accept the invitation to speak at this meeting, on Dr. Finney and the Union Memorial Hospital, because both Dr. Finney and the Union Memorial Hospital meant so much to me.

I first knew Dr. Finney as a boy and it was because of him that I applied for an internship in the old Union Protestant Infirmary. There I met Miss Emily and it was only through Dr. Finney's influence that I was able to persuade her family that she should come to Alabama as my bride.

Doctor Finney was born on a plantation near Natchez, Mississippi, on June 20th, 1863, within sound of battle between the Confederate and Union armies. At that time his father was pastor of the Greenwood Presbyterian Church. They came of a long line of cultured and distinguished ancestors. Doctor Finney's grandfather was graduated from Princeton in 1809 and, after studying for the ministry, accepted a call to the Presbyterian Church in Churchville, Harford County, Maryland, in 1812; there his father Ebenezer Dickey Finney, was born in 1825. The father was graduated from Washington College in Lexington, Virginia (now Washington and Lee) in 1849, at which time Dr. Finney's great uncle, Dr. George Junkins, was president of the institution. It is interesting that Stonewall Jackson, who was then on the faculty of the Virginia Military Institute, married Doctor Junkins' daughter.

Doctor Finney's boyhood was spent in Bel Air, Harford County, Maryland. In the fall of 1881 he entered the sophomore class of Princeton. He was graduated on his twenty-first birthday, June 20th, 1884. Endowed with a marvelous

physique, he was naturally interested in all athletics. During his junior and senior years he played left end on the varsity football team and rowed on the varsity crew. Football was always his favorite sport. After a rugged game between Yale and Princeton in 1883 the New York Sun referred to him in headlines as "Slugger Finney." A pinnacle of fame, of a sort, came shortly after this when he received a letter from the Police Gazette asking for his photograph to be put in their gallery of leading exponents of the manly art of self-defense.

Early in life Doctor Finney had decided to study medicine. In the fall of 1884 he entered Harvard Medical School. That year he played left end on the Harvard varsity football team. He was one of the few men ever to play left end on the varsity football teams of both Harvard and Princeton.

When he graduated from Harvard Medical School in 1888 he received an appointment on the resident surgical staff of the Massachusetts General Hospital. Toward the end of his service there he applied for a position on Dr. Halsted's staff at the Johns Hopkins Hospital. Dr. Halsted invited him to come down for a personal interview at the opening of the hospital, May 7, 1889. After a short conversation about the weather Dr. Halsted said: "Well, when can you come down and work in the Surgical Dispensary?" That was all there was to it. Doctor Halsted later said: "Doctor Finney's fine manly face, revealing his strength of character, appealed to me. Ever since then he has proved, I think, about the best tackle any hospital ever had, and certainly no director of a surgical clinic ever had a more supporting hand than Finney's has been to me. He has been the wheel horse of the surgical side of the hospital." During Dr. Finney's first year at Hopkins he gave anesthetics for Dr.

* Professor of Clinical Surgery, Medical College of Alabama, Birmingham, Alabama.

Halsted in the mornings, worked in the surgical dispensary from ten until noon, and spent his afternoons in Doctor Welch's laboratory.

At this time Aseptic surgery was just beginning and was being developed rapidly by Doctor Halsted at Hopkins. Here Doctor Finney had an opportunity to observe the work of Welch, Osler and Kelly who, along with Dr. Halsted, were known as the "Great Four." Where could a young surgeon have had better training, or more, to put him on his mettle? Here were Doctor Kelly, a fast, beautiful operator, Dr. Halsted, with his insistence on the scrupulous observance of the fundamental rules of good surgery, the gentle handling of tissues, complete hemostasis, avoidance of mass strangulation of tissue by ligature or suture, accurate apposition of wound edges and absolute asepsis; Doctor Welch, with his pathologic laboratory; and Osler, the great physician and humanitarian. Doctor Finney was destined to develop the best traits of each of the "Great Four."

In 1890 he opened an office in Baltimore and began private practice. Following a Hopkins tradition set by Dr. Halsted, he fell in love with a Hopkins nurse. On April 20, 1892, he married Miss Mary E. Gross. She was not only a member of the first class to be graduated from the Johns Hopkins Nurses Training School, but also graduated first in her class.

Dr. Finney found himself now building up a large surgical practice and at the same time teaching and helping in the administration of the surgical service in the hospital. Doctor Halsted was turning more and more work over to him and the residents. At this time, Doctor Halsted, who was very shy, sensitive, modest and reserved among strangers, did his best work in the privacy of his study or laboratory, never before a crowded gallery. He was interested primarily in research and in training surgeons, namely, his residents. He rarely attended medical meetings. So it came about that Dr. Finney, who was next in rank to the "Professor," began to represent Hopkins at medical meetings. It was he who met and entertained the visiting doctors and it was he

who became the good friend of the medical students. They felt they could always approach him with their problems and be graciously received and given the help and advice they wanted. Also, he often advanced them money, that they might complete their medical education.

During Doctor Halsted's frequent absences from Baltimore, Doctor Finney was left in charge of the surgical service. But for many years, although he was Assistant Professor of Surgery, he and the other members of the Hopkins Dispensary Staff were not allowed to admit their private patients to the hospital. His operations had to be done in the patient's home or in some other hospital.

In 1895 Doctor Finney was appointed to the visiting staff of this hospital, then, the Union Protestant Infirmary, which was incorporated in November 1854. On January 5, 1855 the hospital was opened in a small house at the corner of Baltimore and Stricker Streets. Four years later it was moved to a new building on Division Street near Mosher. The hospital was, and still is, controlled by a Lady Board of Managers. One of its first trustees was Johns Hopkins, and he was active on the board from 1855 until his death in 1873. It is possible that his connection with this institution was inspiration for the founding of the Johns Hopkins Hospital.

Doctor Finney saw the possibility of developing the Union Protestant Infirmary into an outstanding hospital. He undertook it, with hearty cooperation at all times of the Lady Board of Managers, the Board of Trustees and the other men on the visiting staff. A resident training program was organized and expanded. It was in this hospital that Doctor Finney gave his brilliant operative clinics which attracted surgeons from all over the world. Here also he encouraged some of the younger surgeons to go into the different surgical specialities. Largely because of his influence, Dr. Staige Davis went into plastic surgery, Dr. William S. Baer into orthopedics and Dr. George Walker

into urology. He helped each of them to a practice in their specialities by referring patients to them who consulted him on conditions in their special fields.

With Doctor Finney on the visiting staff during the development of the hospital were Dr. J. Whitridge Williams, Dr. Hugh H. Young, Dr. Thomas B. Futcher, Dr. Joseph C. Bloodgood, Dr. William Wood Russell, Dr. Cary B. Gamble, Jr., Dr. William S. Thayer, Dr. Frank R. Smith, Dr. William S. Baer, Dr. Henry M. Thomas, Dr. William A. Fisher, Dr. Omar B. Pancoast, Dr. Thomas R. Brown, Dr. George Walker, Dr. F. H. Baetjer, Dr. Richard Follis, Dr. John Staige Davis, Dr. Griffin Davis, Dr. Guy L. Hunner, Dr. E. H. Richardson, Dr. Harvey B. Stone, Dr. Hiram Woods, Dr. Frank Martin, and Dr. Julius Friedenwald.

Among the first residents at the U. P. I. were Dr. D. Z. Dunott, 1895-98; Dr. Omar Pancoast, 1898-1900; Dr. John Staige Davis, 1900-03; Dr. William A. Fisher, 1903-04 and Dr. Hugh Trout, 1905-06.

By 1916 the hospital's physical plant had been repeatedly enlarged and its equipment improved, but it was still far from adequate. Meanwhile the neighborhood had changed and the hospital was in the colored belt of Baltimore. Therefore it was decided to build an entirely new hospital on a new site, leaving the old buildings for establishment of a colored hospital. The high cost of war time building delayed the project, however, until 1922, and the Union Memorial Hospital was opened for patients on September 24, 1923. The name of the Union Protestant Infirmary had been changed in 1920 to the Union Memorial Hospital.

Since 1924 the Hospital has been greatly enlarged by the addition of Johnston Hospital and a Nurses Home in 1927 and the Frederick Bauernschmidt Memorial Building in 1929.

The operating room suite in the new hospital was given by Doctor Finney's friends and associates on the staff. It is marked with a bronze tablet on which is inscribed "The John M. T. Finney Operating Room Suite."

Doctor Finney had very decided ideas on the operation of a hospital. They are expressed in his "Foreword to the History of the Union Memorial Hospital," which was written by Miss Roberta Ball, the long time superintendent.

"A hospital worthy of the name possesses a distinctive individuality, an atmosphere, if you will, which distinguishes it from all other hospitals, in much the same way that what is known as personality distinguishes one individual from another. The hospital atmosphere is but the reflection of the spirit of those responsible for its management. If they are imbued with the proper ideals as to just what is the real function of a hospital, and its true relationship to the patient, the doctors and nurses, and to the community which it serves, it cannot fail to become a place where suffering humanity will find a haven of refuge for the care and relief of its mental and physical infirmities. In order to accomplish the best results it is essential that the highest standards of professional excellence, along with humanitarian ideals should characterize its every activity. Thanks to the wisdom and foresight of the Board of Lady Managers and Trustees, and to the devotion of the Medical and Nursing Staffs, these ideals of service to humanity have in a large measure been realized in the Union Memorial Hospital."

To Miss Roberta Ball, Superintendent of the Hospital from 1913 to 1932, much credit is due for the Spirit of the Hospital. She was a most remarkable woman and an efficient superintendent; a strict disciplinarian; and a very human individual. And even though the House Staff and student Nurses were not supposed to have any social contacts, she was always most interested in the doctors' and nurses' troubles and love affairs.

The spirit and atmosphere of the old U. P. I. and the new U. M. H. are but the reflection of the personalities of Doctor Finney and Miss Ball. And it was largely due to their influence that the hospital through the years has developed and maintained the unusual pleasing atmosphere which characterizes it, and has earned for it a

distinctive place in the community as a really human institution.

It was my privilege to work with Doctor Finney as intern and assistant resident at the old Union Protestant Infirmary, and as the first resident surgeon in the new Union Memorial Hospital. The hospital was really Doctor Finney's love. Respected and adored by everyone from orderly to superintendent, he was profoundly considerate of his assistants and never too busy to advise and help his residents. He was always personally interested in the nurses and house staff, calling them his "girls and boys." Especially was he interested in the romances going on in the hospital, and I can speak personally of that. The Union Memorial Hospital followed the Hopkins tradition set by Dr. Halsted, and many of the house staff were marrying nurses. Here is a letter I received from him just before I finished my residency. It was written in longhand from Little Fish Island, the Finney's summer home just off the coast of Chester, Nova Scotia.

July 17/24

"Dear Frank: The time is drawing near when you leave the U. M. H. I can't let you go without telling you how much I have enjoyed personally my association with you. I shall miss you when I return to work. I trust that the time you have spent in the old U. P. I. and the U. M. H. will prove of help to you in many ways when you get out into practice. You may be very sure that my interest and good wishes go with you. I hope everything has gone well with you in the hospital. I'm sure it has outside. We are all well and enjoying immensely our vacation in this lovely place. The weather has been ideal.

My love to Miss Ball and all the girls and boys at the U. M. H. My best love to the lady.

With every good wish,

Sincerely yours,
J. M. T. Finney."

Thursday was Doctor Finney's big day at the hospital. We would have distinguished visitors from all over this country and Europe. Lunch was

served between operations in the doctors' dressing room just off the operating room. I remember one of our busy Thursdays when Doctor Finney was called to the telephone between operations by a local practitioner, who said he was sending in a patient with an acute gallbladder. Doctor Finney told us, "That man has been sending me patients for the past 20 years and has yet to make a correct diagnosis." It was one of the few critical remarks I ever heard him make of a colleague.

Listening to conversation between Doctor Finney and visiting surgeons was an education in itself, and a delight. It was on these occasions that I met Dr. Hubert Royster, Dr. Legrand Guerry and Dr. Hugh Trout.

Doctor Finney's surgical skill and judgement were unsurpassed. A beautiful technician, he adhered strictly to the sound principles of surgery taught by Doctor Halsted. Although he never seemed to hurry he was by no means slow in his operations. His knowledge of surgical pathology was one of his greatest assets. His manner of arriving at a diagnosis seemed sometimes almost miraculous, but we learned that his conclusions did not come from intuition alone but were the result of experience and observation in many similar cases. With him, consideration of the patient always came first. In the operating room one of his favorite expressions was: "If you can't do him any good don't do him any harm."

Doctor Halsted once said, "I have rarely known a man in surgery with better judgment or greater resourcefulness or courage or kindness." A young lady, one of Doctor Finney's patients, once told Doctor Halsted, "Give my love to Doctor Finney. I don't know him very well, but all his patients send their love to Doctor Finney." And so it was—they did not simply wish to be remembered.

Doctor Finney's reputation as a surgeon grew rapidly and solidly until he was recognized as one of the world's leading surgeons. He contributed to surgical literature many articles in various fields of surgery. Perhaps his greatest

contribution to surgical technic was the Finney pyloroplasty. In May, 1902, he reported to the American Surgical Association on five cases of pyloric stenosis of benign origin, operated upon by a new method of pyloroplasty. He continued to elaborate and improve the technic of this operation, and published many papers on this subject during the next 25 years.

In 1923 he reported to the Southern Surgical Association a new method of gastroduodenostomy, end-to-side.

Another of his contributions to surgery in his early days was an operating trunk, which was used extensively when operations were so often done in the patient's home, in the 1890s and early in the 1900s. He and Dr. Omar Pancoast designed this trunk and it was later adopted by the United States Army.

He became a consultant whose opinion was everywhere sought, and an operator to whom the most important and difficult surgery was entrusted. He was often called to the White House, and there it was that he operated on Alice Roosevelt Longworth for acute appendicitis. On visits to Washington during Theodore Roosevelt's term he was frequently mistaken for the President. There was indeed a striking resemblance.

One of his most interesting experiences in Washington was when he was called in to see Miss Evalyn Walsh, whose father had made millions in copper. Here is Dr. Mitchell's account in a letter to me.

"I have looked up the Walsh case which I, however, remember very well. She had been injured in an automobile accident in Newport, Rhode Island, in which her brother was killed. She had sustained a fracture of the shaft of the right femur, just below the trochanter, and apparently had the most skilled surgeons of that day look after her—Drs. Gibney, Bull and Maurice Richardson. There were some queer things about the case. They had reduced the fracture and applied a plaster cast, but no x-ray had ever been taken after this. The accident

occurred in August, 1905, and I saw her with Doctor Finney on January 16, 1906. There was no sign of union at the site of the fracture and the bones could be seen distinctly through her clothes, overlapping several inches. She was up on crutches and had been advised to walk. Just before we saw her the doctors had told her there was a slight bend at the site of fracture and she could come up to New York and have this straightened. The condition was evident without an x-ray, but we had one taken which verified the diagnosis of ununited fracture with overlapping. Doctor Finney immediately advised operation and this was done in the bathroom at the Walsh home on Massachusetts avenue.

"The ends of the bone were rounded and there was absolutely no union. The fracture was about two inches below the great trochanter and there was verily little callus. The two ends of the fracture were freed and freshened, and were brought in apposition by traction and abduction. A silver Hansmann plate was placed with two screws in each fragment and the leg was then fixed in a very heavy cast, with the leg elevated and in strong abduction, the cast reaching to the armpits. I assisted at the operation and lived in the house for 57 weird nights looking after her. The wound was closed without drainage and healed per prima. An x-ray outfit was installed in the house and frequent x-rays were taken to watch progress. The first dressing was done on February 13 and cast re-applied. On March 20 the cast was removed. On April 16 she left on crutches for Atlantic City. She never had any trouble from this and later walked without a limp, danced, married and had four children. It was a weird case and great excitement."

After the patient had recovered Doctor Finney was faced with the question of sending a bill. Mr. Walsh was a very wealthy man. After due consideration he sent a bill for \$7,500. This he thought fair, as he had made many trips to Washington to see his patient and the result of the operation was perfect. Promptly there came a letter from Mr. Walsh saying he had already

paid \$20,000 in doctor bills without getting any results and that Doctor Finney must have made a mistake. He hoped he would accept the enclosed check for \$25,000.

This was the beginning of a long friendship between Evalyn Walsh, later Mrs. Edward McLean, and Doctor Finney. While I was resident at the Union Memorial he was called back to operate on Mrs. McLean for a very toxic goiter. Before the operation she had called in Dr. Jim Mitchell, Doctor Finney, Dr. Charles Mayo and Dr. George Crile in Consultation.

This operation was performed in her home, Friendship, on the outskirts of Washington. An operating room had been built in the home for this occasion, with lights, operating and instrument tables. We left Union Memorial early in the morning—Doctor Finney; John, Jr., as first assistant; our operating room supervisor; four other nurses; our anesthetist, Dr. Griff Davis; and myself. With us we had the operating trunk packed with instruments and sterile linens. It was quite an occasion. About half of President Harding's cabinet were there for the operation, including Albert Fall, as the Hardings and McLeans were very close friends. Mrs. McLean made an uneventful recovery and came to see us often at the Union Memorial Hospital.

Another experience about which Doctor Finney often spoke was his first visit to Birmingham in June, 1905. Before this, in 1903, he had operated on my father for cholelithiasis, and several years later did a pyloroplasty for duodenal ulcer. The results of both these operations were perfect, as my father lived to be 89 without further trouble.

My father had called him down to Birmingham to operate on Mr. T. T. Hillman, one of our most prominent citizens. The night following the operation Doctor Finney and Dr. William A. Fisher, whom he had brought with him as his assistant, attended a meeting of the local county medical society, where gunshot wounds of the abdomen were discussed. These were not uncommon in our town at that time, nor are they

today, as among our large colored population a lover or husband will often shoot the object of his affection and whoever happens to be nearby. In the discussion it was brought out that although there were many more cases of gunshot wounds in Birmingham than in Baltimore, the mortality rate was lower in Baltimore. They asked Doctor Finney if he would operate on such a case for them. He said he would be glad to but that he was leaving town the next afternoon and couldn't wait for such a case to develop. Early the next morning he was called to the telephone and was told that a gunshot wound of the abdomen was in the hospital, that the woman was in shock, and please hurry over. He left at once for the hospital. The patient, a colored woman, had been shot in the lower abdomen with a pistol. She had several perforations of the small intestine and one fallopian tube was severed. Doctor Finney operated and she made an uneventful recovery, but it was hard to convince him that the shooting had not been arranged for the chance to see him operate. After hearing of the outcome in this case Doctor Finney said he would never again operate on a gunshot wound of the abdomen in Birmingham, "as he had used up all his luck."

Early in his surgical career Doctor Finney had been offered the professorship of surgery in the University of Texas. Later he was offered the professorship of surgery in Harvard University. After Dr. Halsted's death he was offered the professorship of surgery in the Johns Hopkins Medical School. He declined all the honors, but was acting professor of surgery at the Johns Hopkins Medical School for about three years, after which the title of Emeritus Professor of Surgery was conferred on him.

The following is a partial list of honors and degrees conferred on Doctor Finney: President of the Southern Surgical and Gynecological Association, 1912; President of the American College of Surgeons, 1913-14-15; President of the American Surgical Association, 1922; L.L.D. Tulane, 1935; L.L.D. Harvard, 1937; L.L.D.

Loyola College, Baltimore, Md., 1940; Bigelow Medal for Contributions to the Advancement of Surgery, 1932; Honorary Member of the Medical Society of London, the Hunterian Society, The Royal College of Surgeons of England, the Royal College of Surgeons of Ireland, and the Royal College of Surgeons of Edinburgh.

Supplementing his busy life as a surgeon, Doctor Finney was always interested in the civic affairs of Baltimore and Maryland. He served on the State Board of Education; was chairman of the Board of Trustees of both the Gilman Country School for Boys and the McDonough School for Boys, and chairman of the Board of Trustees of Lincoln University, Oxford, Pennsylvania, a college and theological institute for Negro youth. For many years he was a member of the Board of Elders of the Brown Memorial Presbyterian Church and for one year was Vice-Moderator of the General Assembly, the governing body of the Presbyterian Church in the United States. He was also active in the Red Cross and Baltimore Community Chest.

Doctor Finney's military career began in 1898 at the outbreak of the Spanish American War. He was a Major in the Medical Corps of State Militia. Later he was appointed Surgeon General on the staff of Governor Edwin Warfield of Maryland. In World War I, when the Johns Hopkins Base Hospital Unit was organized in May, 1917, he was appointed Director of the Unit with the rank of Major. This unit sailed for France June 14, 1917. Doctor Finney was later appointed Chief Consultant in Surgery to the A. E. F., and promoted to the rank of Colonel. At this time Dr. W. S. Thayer had been appointed Chief Consultant in Medicine to the A. E. F. Shortly after Doctor Thayer's arrival at the Medical Headquarters of the A. E. F., he wrote in his notebook: "Last night with Finney was very agreeable. He is, as ever, a beautiful character, loyal, simple, strong. No one fundamentally in our group has such real power." Tis he who, in the little meetings of our

Dinner Club, has the last say. "Tis his character. And here, as elsewhere, he has captured all." In October, 1918, Doctor Finney was made a Brigadier General. In recognition of his outstanding work as Chief Consultant in Surgery to the A. E. F., he was awarded the Distinguished Service Medal from the United States, The Commander de l'Ordre de la Couronne from Belgium, the Officer de la Legion d'honneur from France.

I can't conclude these reminiscences without mention of the time in 1912 when Doctor Finney was confronted with the great decision of his life. He had maintained a close association always with his alma mater, Princeton University, and in 1910 had been elected a life trustee. After Woodrow Wilson resigned as president of Princeton to accept the nomination for the governorship of New Jersey, a delegation came down to Baltimore and offered Doctor Finney the presidency. It was a tremendous honor and a tremendous opportunity. His love for Princeton was great and this was an invitation to tempt anyone. But after long deliberation and consultation with friends in the profession and in the field of education, he decided that it would be impossible to give up his surgical work. He had now not only become one of the most famous surgeons in America but was also recognized as the first citizen of Baltimore and Maryland. In celebration of his decision to decline the Princeton offer and remain in Baltimore, a testimonial dinner was given in his honor here on February 17, 1912, at which a fund would be collected to be known as the "John M. T. Finney Fund for the Advancement of Surgery."

There were 336 guests, including the Governor of Maryland, leading physicians, and men prominent in all walks of life from various parts of the country. Dr. William S. Thayer was toastmaster, and speakers included Governor Goldsborough of Maryland; President Hibben of Princeton; Dr. William S. Halsted; Reverend Francis L. Patton, President of the Princeton Theological Seminary; Admiral Stokes, Surgeon

General of the Navy; Mr. Joseph B. Baker of Frederick, Md.; Dr. W. W. Mitchell of the University of Maryland; Dr. Samuel T. Earle of the Baltimore Medical College, and Dr. Louis P. Hamburger.

The testimonials were universal and heart filling; one, a cablegram from Doctor Osler at Oxford; "Greeting to the man, with head, heart and hand. Congratulations to Hopkins and the citizens. Osler."

There were telegrams from all over the country, and long articles and editorials about the dinner in the Baltimore papers. An editorial in the Baltimore Evening Sun was captioned simply "Doctor Finney." It read:

"One of the somewhat florid epitaphs with which the tombs of England's great men abound begins in this wise: 'At any and all times he gave his strength to the suffering, his goods to the poor, his heart to God.'

"As nearly as such words can be applicable to anyone they apply to the man whom several

hundred leading physicians, surgeons, educators and citizens generally will honor with a banquet at the Belvedere tonight.

"In point of usefulness—usefulness to his profession, to his city and country and to humanity—there are few men anywhere who surpass Dr. John M. T. Finney, Baltimore is proud of him."

And so it was! Doctor Finney himself had little to say at the banquet. So much had been said of him and for him. But I close my own remarks with him there at the banquet, saying little of himself but honored in his profession and community. A great surgeon and a great man, as entitled as any we know to Shakespeare's tribute:

"His life was gentle, and the elements
So mixed in him that Nature might stand up
And say to all the world—"This was a man!"

*402 Medical Arts Building
Birmingham, Alabama*

UNION MEMORIAL ANNIVERSARY

A. AUSTIN PEARRE, M.D.

I deem it a great privilege to participate in a program commemorating the One Hundredth Year Anniversary Celebration of the Union Memorial Hospital. I would like to take this occasion to congratulate the Board of Managers, the Board of Trustees and the Staff upon their splendid record of development and progress and upon the great service they are rendering to those who are ill and in distress.

It has been 30 years (30 is no small fraction of 100) since it was my privilege to actively serve the Union Memorial Hospital, and what a great privilege it was to make rounds with and to study under a medical staff composed of Drs. Walter A. Baetjer, L. F. Barker, T. R. Boggs, T. R. Brown, Warren Buckler, J. A. Chatard,

W. M. Dabney, Julius Friedenwald, T. B. Futcher, Cary Gamble, L. P. Hamburger, Louis Hamman, Berry Iglehart, Charles Judd, Robert Keyser, Albert Keidel, Mason Knox, Charles Larned, Frederick Leitz, William Lockwood, William Lord, Sydney R. Miller, I. R. Pels, Gibson Porter, Wharton Smith, Frank R. Smith, H. M. Thomas, Eugene Van Ness and Gordon Wilson. I am sure that it saddens us all a very great deal when we call the roll of these distinguished physicians and realize that at least two thirds of the staff of 30 years ago have passed on to their eternal rest.

In reviewing the 70th Annual Union Memorial Hospital Report of 1924, I noted in the report of the President of the Board of Managers,

Mrs. Harriet S. Baker, that "The first year in our new building has been a very satisfactory one.... Plans are nearly completed for the Johnston Hospital and Nurses Home.... This will release for hospital service the 32 rooms at present occupied by our nurses." Mrs. Baker called attention to our "debt of gratitude to that small band of devout women of vision who 70 years [now 100 years] ago established this institution on the strong foundation of faith and prayer."

The report of the Superintendent, Miss Roberta L. Ball, revealed some very interesting facts. This was the "First complete report of the administration of the new hospital building for the year ending Dec. 31, 1924." (The new building, as you know, had been opened Sept. 24, 1923.) 2585 patients had been admitted in 1924. The average daily census had been 123.8.

There were 149 beds available, and Miss Ball noted that these were at times inadequate for the demand. The per capita cost per diem for general expenses was \$6.45 $\frac{1}{10}$. The per capita cost of food was 88 $\frac{1}{10}$ cents. "The crying need was for the moderate priced room." There were 102 nurses in training and 15 doctors on the house staff.

In looking over the medical summary, it was interesting to note that of 25 cases of lobar pneumonia, 9 had died. Of 5 cases of lobar pneumonia complicated with empyema, 4 had died.

During the year there were 2 cases of staphylococcus aureus and one viridans septicaemia and all three had died.

It was interesting to see 3 cases of typhoid fever listed and only 19 cases of diabetes mellitus.

I first heard of the Union Protestant Infirmary in 1922 when I came to Baltimore to begin my intern service. Phil Price, who had been a classmate of mine at the University of Virginia, was serving an assistant residency there. How thrilled the house staff at Church Home was in those days when, now and then, we had the privilege of scrubbing up for Dr. J. M. T. Finney!

A year later, I was fortunate enough to be able, on the Marburg Service at Hopkins, to work up patients for Dr. Sydney Miller and Dr. Walter Baetjer. I felt that I had never seen better physicians, and I was especially impressed with their ability to apply a blend of common sense with science to the practice of medicine. You can imagine my pleasure and my pride when in 1924 they extended to me the great opportunity to serve as the second medical resident at the New Union Memorial Hospital. Dr. Lay Martin had served as the first medical resident the year before.

I had never seen a finer new hospital. I enjoyed my service so much at Union Memorial that usually when I had an evening off I preferred to remain in the hospital and just visit patients rather than go out into the city. How well do I remember 30 years ago, after a full but delightful day's work, stepping quietly into the doctors' recreation room after midnight, putting on earphones and listening, incredulously, to dance music from station KDKA. I wonder what my reaction would have been had someone told me then that the day would come when I would have television in my home!

In those days, we treated septicaemia with intravenous gentian violet and mercurochrome. We were becoming familiar with regular insulin but we were still treating our pernicious anaemia patients with repeated blood transfusions, iron and injections of sodium cacodylate. It was not until more than a year later (1926) that Drs. Minot and Murphy applied Whipple's observations of the beneficial effect of raw beef liver upon blood regeneration in anaemia to the treatment of pernicious anaemia.

The tide began to roll not only in the direction of many life-saving medical discoveries, but things began to happen which have had a far-reaching effect on us as human beings.

The years of our generation have been referred to as those terrible, wonderful years.

Frederick Lewis Allen, in reviewing our era, commented that "the widespread defiance of the

Prohibition laws was only one symptom of a pervasive change in American manners and customs during the postwar years. The abandonment of ballroom decorum was typified by the vogue of the Charleston which had originated among the Southern Negroes and was imported from Harlem into white society and became briefly popular about 1926." Women began to smoke and this was one reason why annual sales leaped from 47 billion cigarettes in 1920 to 125 billion in 1930. We were concerned, but little, with cancer of the lung.

We began to hear of psychoanalysis and psychiatric treatment. "By 1927, the skirt hem had ascended to the knee and even above. Flesh-colored stockings came into vogue. By 1926, gone or going was long hair." I remember in 1925 when the administration at Union Memorial emphatically and actively opposed the nurses bobbing their hair.

President Calvin Coolidge was elected to succeed himself in 1924. He smiled silently upon Coolidge prosperity. How well do I remember the Ford Model T coupe with its three foot pedals of this era and how proud I was to purchase one at second hand for \$325.00 in 1925 when I began my practice of medicine. It is hard for us nowadays to realize how drastically the improved automobile, and the extensive road building and road resurfacing that accompanied and aided the expansion of the automobile industry, transformed the conditions of American living.

Dr. J. M. T. Finney, in his wonderful little book, *The Physician*, written in 1923, in discussing Medical Education and the problems of full-time teaching, commented prophetically and in an almost uncanny manner upon "the effect of increased requirements for entrance into and graduation from the medical schools." He stated that "these in turn have apparently had a marked effect upon the supply of medical men available for rural communities. From every rural section of the country comes the same cry with ever increasing intensity: 'Send us doc-

tors.'" Dr. Finney commented further, "Shall we have two grades of medical schools, as advocated by some? . . . There is something to be said in favor of the second-grade medical school for training the general practitioner of medicine. Much objection is at once raised against this proposition as a step backward in medical education. But, as President Cleveland once said upon a famous occasion, 'We are confronted with a condition and not a theory,' and something must be done to remedy it. At the present time, not nearly enough physicians are being graduated to supply the demand of the entire country, and the majority of these are going to the cities and large towns, and the rural districts are all the time becoming more deserted as the old doctors die off or become superannuated . . . Then, too, in these days of good roads, the automobile and the telephone, social changes of all kinds are constantly taking place, town and country are being brought closer together, and it is not beyond the bounds of possibility that the comparatively near future may show very marked changes along these lines. Country people can get to town to visit the doctor more readily than formerly. Nurses, for the same reason as the doctors, do not like to accept cases in the country . . . Are we to have two grades of nurses' training schools, those for training teachers of nurses and those for training nurses to take care of the sick in general? It looks now as if the general trend were in this direction." Dr. Finney anticipated our problems of today thirty years ago.

While the tide of years has reminded us that life is real and that life is earnest, on the lighter side those late '20s provided us some entertainment thrills, too. Remember Babe Ruth, the Bambino, the Sultan of Swat, who in 1927 hit 60 home runs, and Lou Gehrig, who from 1925 until he left the line-up because of a fatal illness played 2,130 consecutive games for that one club, the New York Yankees. Who would have guessed that two such powerful athletes would be conquered by disease in the early prime of life?

Do you remember the long count in the seventh round of the Dempsey-Tunney fight at Chicago in 1927, and that 104,943 Americans paid \$2,658,660 to see this fight? Do you recall "Red" Grange of the University of Illinois? Remember Bobby Jones; *Abie's Irish Rose*, which ran on until 1927 for a record run of 2,327 performances, which record stood until *Tobacco Road* at last broke it?

Do you remember the thrill when, in 1927, part talking pictures were demonstrated in New York City when Al Jolson appeared in "The Jazz Singer"? It contained only 291 words of spoken dialogue, but it was a start.

When Capt. Charles A. Lindbergh made his sensational New York to Paris, non-stop, transatlantic flight May 20, 1927, alone in his monoplane, "The Spirit of St. Louis," public interest in long-distance flying and its possibilities became really intense. The development of aviation has, of course, made the world smaller, and as the world gets smaller, the individual and the welfare of the individual loom larger.

"In 1928, the name of Alfred E. Smith was placed in nomination by Franklin D. Roosevelt to run against Herbert Hoover when Calvin Coolidge chose not to run. Smith declared that the 18th Amendment must be amended."

Do you remember the scare nearly all of our hospitals got when on May 15, 1929, fire and nitrogen dioxide fumes from X-ray films killed 124 in the Cleveland Clinic Hospital?

It was on the morning of Thursday, October 24, 1929, that the bottom dropped out of the stock market and precipitated or reflected one of the worst economic crashes in history.

This fanned the flame. The three decades leading up to President Franklin Roosevelt's administration had timidly entered many fields that later were to characterize the "welfare state." The depression and World War II were to speed up the process.

In 1933, the non-fiction best seller was Walter B. Pitkin's *Life Begins at Forty*, which offered

solace to men and women whose early ambitions had been wrecked by the depression.

The panic from bank failures grew and culminated in the closing of every bank in the country March 4, 1933, the day Mr. Hoover left office and Mr. Roosevelt came in. Mr. Hoover "stood stubbornly for a principle that the federal government must not give money to individual Americans, lest it undermine local responsibility and individual character."

Do you remember Mr. Roosevelt's Inaugural Address when he said "The only thing we have to fear is fear itself"?

And yet, there was "The Gathering Storm."

Remember Huey Long, the Louisiana Kingfish, who cried, "Share Our Wealth" and who was assassinated by a doctor in 1935; and on December 11, 1936, "Now at long last . . ." King Edward VIII abdicated the English throne to marry the woman he loved.

Do you remember when Dr. Allan Roy Dafoe, the country doctor, brought into the world five little girls, identical twins whose combined weight at birth was less than ten pounds, when he delivered Mrs. Elzire Dionne, May 28, 1934?

Do you recall when in 1937 sit-down strikes became epidemic during the "Recession," and labor unions received a tremendous boost from Mr. Roosevelt?

In 1931 our National debt was \$16,801,281,000, or \$135.45 per capita. After World War II our debt stood at the staggering figure of \$258,000,-000,000, or \$1,852 for every man, woman and child in the U. S. A.

Dr. I. Ridgeway Trimble has pointed to the "recent lesson of the inability of war to settle world problems when we reflect that, after victory in World War I, we fought our former allies in that war, the Italians and the Japanese, in World War II; and when we reflect that, after victory in World War II, 'we fought' in the Korean War against China and Russia, two of our great allies in World War II."

The Korean War has also been followed by general restlessness and lack of confidence. At

the present time, more and more people seem to require rest, vacations, benzedrine, shock treatments, sedatives or alcohol in order to keep going. Observe the mounting tension as we daily drive in traffic. We hear of A-bombs and of H-bombs, and the spending this year for a total "major national security program" will be \$41,900,000. Our deficit spending this year will be \$4,750,000,000. Our total Federal government expenditure in 1924 (30 years ago) was \$3,048,677,965.

War, of course, provides a fertile soil for the roots of taxation. "The most important economic aspect of income taxation is naturally its effect upon the capacity and psychology of the taxpayer, for these may affect his willingness to work and to save, and thus have important reactions upon national production." Think of this influence on our younger generation which was "born in a depression, weaned on world war and is presently greeted at 18 with a conscription number."

In all countries the prodigies of wartime achievement by national governments left a deep impression in which Socialism and the Welfare State later flourished. More and more of our people are reminding their State and National Governments of their rights and they seem to overlook their obligations. This tide is rolling on.

How privileged we doctors and nurses have been to have had added in our lifetime such a group of miraculously life-saving drugs to our therapeutic armamentarium.

The Golden Age of the sulfonamides began in 1936 and the era of our antibiotics began with penicillin in 1942. We must not forget progress made in vitamin and in endocrine therapy and the advances made by surgery, especially in relation to the chest and the circulatory system.

In the past, pneumonia was called the "friend of the aged." We have now postponed dying. The major problem confronting our profession today is caring for chronic illness and in seeing to it that our aging population is adequately provided for. We strive for rehabilitation.

In 1935, when Congress first began studying the problems of economic security for the aged, there were around 7,800,000 persons over 65. Today, there are about 13,000,000 and by 1960 there will be 14,000,000. This problem has not "Gone With the Wind" nor can we, like Scarlett O'Hara, worry about this tomorrow.

And as the tide of years has rolled and time has marched on the Union Memorial Hospital has certainly continued to grow, and I note from the 99th Annual Report that there are 30 names listed on the Resident Staff (twice as many as 30 years ago). There were 11,537 patients treated during the year. (This was approximately four times as many as were cared for 30 years ago.) The total operation expenses were \$1,842,018.33, approximately six times as much as 30 years ago. I note that the total beds available are now 342. The average daily census, 281.16, is more than twice that of 30 years ago.

The average cost per patient day (including newborn) was \$17.48. This compares with \$6.45 $\frac{1}{2}$ thirty years ago.

Today there are about 6,665 registered hospitals in the United States, with approximately 1,500,000 beds. Last year there were about 19,000,000 patients admitted to hospitals. The trend toward the greater utilization of hospitals continues. The growth of pre-paid medical care and hospital insurance has been phenomenal. It has been said that hospitals themselves are sick. If this is true, they still have good strong hearts and they are doing a magnificent job. When one considers the socioeconomic problems that have arisen chiefly following wars, especially in relation to salary demands, and a 40-hour week, and the effect of high taxation on incentive, and know that the hospital must steam ahead 24 hours a day with three shifts of employees, and must provide standby services around the clock to meet a rather exacting, if not demanding, public, the service given and the results obtained by the modern hospital are *both* truly remarkable.

I hope that in our zeal to improve hospital standards and to meet accreditation require-

ments that it will not be necessary to take any more time from bed-side nursing care and from physician-patient relationships in order to meet the ever-increasing demands of maintaining our voluminous records. This burden is being felt especially by the staff of the community hospital unable to obtain interns or a resident staff, and I rather suspect that it is sometimes felt by the patient.

Dr. James B. Conant, U. S. High Commissioner to Germany, has said that "a widespread concern with alleviating or eliminating suffering and a firm belief that suffering can be reduced by human efforts are certainly characteristic of America today." He adds that "the goal of

physical well-being may prove to be one of the unifying forces of the 20th Century."

Hospitals and physicians may prove to be the greatest ambassadors for world peace in our time. Certainly the Union Memorial Hospital continues to make an outstanding contribution in serving humanity and it is to be hoped that the medical profession will continue to be motivated by the "philosophic spirit" described by Sir Thomas Browne. We must all be willing to work harder and to sacrifice more for the common good. The tide of years continues to roll and for many of us it is later than we think.

*4 E. Church Street
Frederick, Maryland*

SELECTIVE SERVICES CALLS FOR REVIEW OF DOCTORS IN RESIDENCIES

THE AMA Washington Letter, No. 84-88

Selective Service headquarters is asking its state directors to review the files of all physicians in residency programs who have not requested deferment under the military or Public Health Service residency training program. The directors are to report their findings by September 15 or soon thereafter as possible. Selective Service declares:

It has been noted that some physicians who have completed internships and are in residency training but who are not in a residency training program of the armed forces or the Public Health Service have been given occupational deferments. It also has come to the attention of this headquarters that many young physicians who have completed internships are not applying for commissions or for acceptance in such residency training programs on the theory that their local boards either will defer them or not process them for induction."

All three military services have programs under which a physician who is subject to the regular draft may apply for deferment to take a residency provided he selects a speciality of value to the armed services and promises to take a reserve commission. He must serve on active duty for at least two years.

Scientific Papers

RECENT ADVANCES IN THE CHEMOTHERAPY OF CANCER¹

JOSEPH H. BURCHENAL, M.D.²

In discussing the chemotherapy of cancer, it would seem best to point out the various advances that have been made in this field in the past fifteen years. Several of these advances have been in theoretical concepts. The first is the removal of cancer from the field of mysticism. It has frequently been said that we will not understand the nature of cancer until we understand the nature of life itself and that therefore any studies on the treatment of cancer are bound to fail. It is now agreed by many, however, that the cancer cell can be considered the cause of the symptom complex we know as cancer just as the pneumococcus can be considered the cause of the symptom complex we know as pneumonia.

This explanation has been accomplished, to a large extent, by the work of Toolan and her group (1), who have successfully transplanted subcutaneously into irradiated and/or cortisonized rats and into the cheek pouch of cortisonized hamsters a substantial percentage of the hundreds of human tumors studied. These tumors grow with varying rapidity, but some with a very high rate of growth have been carried for many generations in animals. These tumors will also grow in tissue culture and in the developing chick embryo. When one of these tumors from a

metastatic carcinoma of the cervix was, after several generations in animals, put back subcutaneously into the same patient, with the patient's permission, it grew rapidly, and on total excision showed the same structure as the original carcinoma. (1) Thus the cancer cell fulfills the three postulates of Koch as follows: (1) the organism must always be found at the site of the disease, and certainly it is true that the cancer cell is always found at the site of the disease in man. (2) The organism must be grown outside the host, and this has been duly accomplished with the cancer cell. (3) The organism, when put back into a susceptible host, must cause the disease, and this too has been demonstrated.

A second advance in the chemotherapy of cancer has been the conditioning of men's minds to accept the possibility of success by chemotherapeutic means. The development of chemotherapy of infectious disease was hampered for many decades by the inability of investigators to comprehend the possibility of cure by chemical agents. Thus, the principle of antibiotic inhibition, which was first noted by Pasteur in the late eighteen hundreds and again by Fleming in 1928, was not considered to be of practical significance until the chance discovery of the sulfonamides in 1935 conditioned men's minds to accept the possibility of chemotherapy. The original demonstration by Farber (2) that the folic acid antagonists would temporarily cause all signs of acute leukemia to disappear in some children, and similar demonstrations with the steroids and the purine antagonists has brought us to believe that the eventual control of neoplastic disease by chemotherapeutic measures is a definite possi-

¹ This investigation was supported by a research grant from the National Cancer Institute of the National Institutes of Health, Public Health Service; institutional grants from the American Cancer Society, the Damon Runyon Memorial Fund for Cancer Research, Lasker Foundation, and the Black-Stevenson Foundation.

² From the Chemotherapy Service, Memorial Center for Cancer and Allied Diseases, Division of Experimental Chemotherapy, Sloan-Kettering Institute, and the Sloan-Kettering Division of Cornell University Medical College, New York, New York.

bility. For that reason, a tremendous amount of investigation is now under way on this aspect of neoplastic disease.

There are two general approaches to chemotherapy: first, the fundamental approach, in which differences between the normal and neoplastic cell would be found, and on these differences the synthesis of chemical agents could be rationally planned which might damage the neoplastic cell without damaging the normal cell. Unfortunately, however, no real qualitative differences between the cancer cell and the normal cell have as yet been discovered, and although this fundamental approach should by all means be continued, it has not contributed much to the solution of the problem up to the present time.

The second approach is that of empiricism. Here, large numbers of compounds would be tested against animal tumors and leukemias in an attempt to find one which might be of value clinically. Intellectually this is considerably less satisfying than the first approach, but I have only to remind you that sulfanilamide, penicillin, streptomycin and the whole host of newer antibiotics were all found by such empirical methods before the rationale for their use was known. Empirical screening programs have been set up in many parts of this country and the world in an attempt to find agents which would be effective clinically. One of these set up by Stock and Rhoads (3) at the Sloan-Kettering Institute has studied over thirteen thousand compounds of known chemical structure and another twelve thousand microbiological filtrates against Sarcoma 180, a transplantable solid tumor, in mice. Those which have been effective against Sarcoma 180 are studied against a spectrum of some twenty mouse and rat tumors; against various sensitive and resistant strains of mouse leukemia; against normal and neoplastic cells grown side by side by the roller tube technique in tissue culture; and against the developing chick embryo. It is hoped that this screening program will soon include several human epidermoid carcinomas

growing in the cheek pouch of the cortisone-treated hamster.

The compounds about which I would like to speak most today are the antimetabolites. An antimetabolite may be defined as a compound whose chemical structure is so closely allied to a vitamin or normal nutrient that it is able to enter into the enzyme system into which the normal metabolite goes. Once there, however, its chemical structure is sufficiently different so that it can proceed no further. It blocks the enzyme system and prevents the normal metabolite from entering. Thus it acts to cause a relative deficiency of this particular vitamin or essential nutrient. Many of the studies on cancer research to date have pointed toward the nucleic acids as the important factor in cancer metabolism. The metabolism of these nucleic acids differs from tissue to tissue (4) and the nucleic acids of the cancer cell are presumably different from the normal cell.

This brings us to another advance in cancer chemotherapy in the theoretical realm which is the increase of interest of biochemists in chemotherapy. Without the biochemists we would be working by pure empiricism. With the aid of the biochemists in pinpointing the sites of action of the various chemotherapeutic agents which have been shown empirically to be of value in clinical and experimental neoplastic disease, it is possible to use more rational empiricism. They are able, for instance, to point out exactly where the folic acid antagonists act in preventing the de novo synthesis of purines, and where along the same metabolic pathway diazoacetyl serine has its effect, and how mercaptopurine acts at a higher level of the same pathway to prevent the incorporation of these pre-formed purines into nucleic acid. They have shown us the differing appetites of the normal and tumor cells in rodents for C14 labeled guanine and C14 labeled 2,6-diaminopurine. The work of Skipper et al. (5) for instance has demonstrated that guanine generally is poorly incorporated into animal tumors compared to its incorporation in the liver and intes-

tinal tissue, whereas diaminopurine in general has a higher rate of incorporation in neoplastic tissues than it does into these two normal tissues.

The development of resistance to chemotherapeutic agents is well known to all of you who have used these agents clinically. It is this phenomenon which prevents the clinician from controlling leukemia indefinitely with the antagonists of folic acid or the purines. The development of resistance to these agents has been studied in animal tumors, in mouse leukemia and in bacteria, and it is of interest that between the folic acid antagonists, purine antagonists, and azaserine there is no cross resistance, either in bacteria or in human or animal leukemias. In fact, there is even some evidence in bacteria and in mouse leukemias of increased collateral sensitivity developing to one agent when the cell becomes resistant to a different agent.

As for the practical aspects of cancer chemotherapy, I would now like to discuss with you briefly the treatment of the acute leukemias (6). We have at the present time three types of agents which are useful in the treatment of this disease: the folic acid antagonists, of which Amethopterin is an example; the purine antagonists, of which Mercaptopurine is an example; and the adrenocortical hormones, of which Cortisone is an example. All three of these compounds will produce remissions in some children with acute leukemia. The steroids are valuable in children and young adults, Amethopterin causes excellent remissions in children, and Mercaptopurine will produce remissions not only in children but occasionally in adults of all ages as well. It is important to remember that remissions caused by the antimetabolites, the folic acid antagonists and the purine antagonists require three to eight weeks to be achieved but that, when such remissions do occur, they generally last longer than with the steroids. Conversely, the steroids act much more rapidly than the antimetabolites, but the remissions are of short duration. For this reason, we feel that the antimetabolites should be considered the main reliance of the chemotherapist and that

the steroids should be saved as an ace-in-the-hole for the situation in which rapidity of action is necessary or where the patient's disease has ceased to respond to either the folic acid antagonists or mercaptopurine. Thus, if the patient presents himself to us and is acutely ill with evidence of considerable bleeding and fever, it is generally preferable to start with a short course of cortisone or ACTH in an attempt to get him over the dangerous stage of his disease. After this, one should switch to the antimetabolites. If on the other hand, the patient presents himself without much evidence of bleeding, it would be preferable, we feel, to start with mercaptopurine in an adult or with mercaptopurine or Amethopterin in a child.

Since resistance to Amethopterin is not necessarily followed by resistance to mercaptopurine or cortisone and vice versa, one can use these compounds sequentially and cause definite prolongation of survival time by this method. The percentage of adult patients with acute leukemia who will be benefited by any of those forms of therapy is small and, although in the individual patient prolongation of life may be seen, these are not reflected in the general overall statistics. With the children, however, the percentage of remissions is much higher, and we believe the figures show a definite increase in survival time. One can compare the figures collected from the literature by Tivey (7) on 218 children with acute leukemia on no therapy, of whom 5 per cent were alive 12 months after the start of their disease, with a group of 154 children with acute leukemia treated with Amethopterin and/or cortisone at Memorial Hospital, where 29 per cent were surviving 12 months after the start of their disease, and with a group of 69 children who were treated at Memorial Hospital during the period between June, 1952 and September, 1953, when mercaptopurine became available in addition to the steroids and Amethopterin. Not all these children necessarily had all three agents, but the three agents were available if it was felt that they were indicated, and all children who lived long enough

got all three agents. Some of the very ill were treated with cortisone for a matter of days or hours and died before mercaptopurine or Amethopterin could be administered, but all are considered in these figures. Of this group of 69 children, 46 per cent were surviving 12 months after the start of their disease. These figures and the other evidences of progress cited argue well for the eventual control of cancer by the chemotherapeutic approach.

444 East 68th Street
New York 21, New York

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TURN-UP PLASTY AMPUTATION

T. CAMPBELL THOMPSON, M.D.*

The operative procedure of turn-up plasty has a rather limited use, however we have found that in a small number of patients with an unusual problem that it has a real advantage. At times, one is able to preserve the thigh length, preventing a disarticulation of the hip and thereby providing enough thigh length to use a standard A. K. prosthesis.

Our attention was first called to this procedure, in 1949, when a 52 year old negro patient presented himself at our amputation clinic, with a rather peculiar looking thigh stump. It was not grossly deformed, but the bone at the end was rather prominent and along the lateral surface it could be felt just beneath the skin. The position of the scar was rather peculiar. An x-ray was taken which revealed that the tibia and fibula had been reversed and placed into the thigh and fastened with a long bone plate to a small portion of the femur. This patient was fitted with a

prosthesis without too much difficulty. Review of this patient's history, revealed that he had had a large cyst removed from the femur, and that following the excision of this bone, there had been too large a gap to graft and that the turn-up plasty had been performed as a method of preserving enough thigh length to provide a prosthesis. We consulted the literature to find out how such a stump had been obtained, and we found that in the *Journal of Bone and Joint Surgery*, for October, 1948, Dr. C. P. Van Nes of Leiden, Holland, had described the turn-up plasty for the total or sub-total resection of the femur. The object of this operation was to give a useful thigh stump, rather than a hip disarticulation. He had performed this operation upon two patients, one in 1942, and the other in 1947; both have done very well. One amputation was for a myxochondrosarcoma of the femur, and the other for a perithelioma. In his description of the operation, the foot was amputated, and the leg was turned up in the coronal plane to replace the lower two-

* Professor of Clinical Orthopedic Surgery, Cornell University Medical School.

thirds of the femur, or the entire femur, as seemed necessary. This ingenious surgical procedure was not original with Dr. Van Nes. A search of the literature reveals that Sauerbruch, who invented many ingenious operations, had performed what he called an "unkipp-plastik des Unterschenkels," in 1922. The main difference was that in his two cases, the lower leg was turned upward in the sagittal plane rather than in the coronal plane. The result in all of these cases was a thigh stump with good function. Disarticulation of the hip had been the usual treatment for tumor or infectious disease of the thigh which had destroyed most of the femur.

The first patient in which we believed there was an indication for carrying out such an operative procedure, was seen at the Hospital for Ruptured and Crippled, in 1946. She had had ten operations for non-union of the shaft of the femur. Inasmuch as we believed that the non-union would unite once a satisfactory operative procedure was carried out, several bone grafting procedures were undertaken with various types of fixation for the bone grafts, and still the non-union persisted. In 1952, a turn-up plasty procedure was carried out on this patient, and the end result was so satisfactory that the patient was subsequently fitted with a standard "above knee" prosthesis. A year later, she returned and obtained a suction socket prosthesis.

The second case, was that of a South American patient, who presented himself in January, 1953, with a completely useless leg. He was 29 years of age, and at the age of 13, had had osteomyelitis of the femur. After four operations, he had had a subperiosteal resection of the proximal four-fifths of the femur. This apparently cured his osteomyelitis, but left him with a leg seven inches shorter than the other. There was an ankylosis of the left knee, but the leg and foot were practically normal. X-rays revealed a spindle-like femur with a non-union of a fracture in the lower third. The bones of the lower leg appeared normal. In this case, the entire femur and the fused knee-joint and the upper part of the tibia, were all excised, and the lower leg turned upward to form a thigh stump. This was done in the coronal plane similar to the method of Van Nes, rather than the sagittal plane as described by Sauerbruch, so that the lower end of the fibula could be fitted into the acetabulum.

Although the indications for this procedure are few, and the occasion to use it will probably not occur frequently in any one individual's practice, the operation is entirely feasible, and the end result is far superior to that obtained from a disarticulation of the hip.

535 East 70th Street
New York 21, New York

RECONSTRUCTION OF THE ACUTELY INJURED HAND

RAYMOND M. CURTIS, M.D.

The marvelous anatomy of the human hand, as to its combination of strength and flexibility, is hardly equaled by any other part of the human body. It is also this same part of our body which is incorruptible in exposing the secrets of the heart and soul, while our faces may obey the will of the individual. It is little wonder that the patient may show psychological disturbances following crippling hand injuries.

It is of utmost importance that we be conscious of Dr. Bunnell's (1) dictum that it is the early treatment given the acutely injured hand, which determines whether the hand is "doomed to disability" or "will regain usable function."

BASIC GENERAL PRINCIPLES FOR HAND SURGERY

There should be a thorough evaluation of the injury with respect to its cause, time of occurrence, status as regards infection, nature of first aid, and a thorough appraisal of the damage.

For undertaking definitive treatment the following conditions are required:

1. A well equipped operating room.
2. Adequate instruments.
3. Sufficient assistance.
4. Complete anesthesia.
5. A realization of the importance of the procedure.
6. A bloodless operating field provided by a pneumatic tourniquet.
7. Meticulous atraumatic surgical repair.

THE BLOODLESS OPERATIVE FIELD

It is impossible, as well as dangerous, to explore a hand and perform the necessary repair without the aid of a bloodless operative field provided by a tourniquet.

Figure 1 demonstrates the arm outstretched on a special arm board, the use of which was

first described by Boyes (2) in 1950. This is designed to allow the operator to sit in the oval area and do much of his work with his elbows resting on the table. This is of particular value for the more meticulous type of work.

One will note in this diagram that the sphygmomanometer cuff of the wrap around type has been placed on the arm after a layer of glazed cotton has been applied to the arm, and then covering the sphygmomanometer cuff there is a layer of gauze bandage to prevent the ballooning of the cuff when inflated. Some of the newer types of pneumatic cuffs are excellent as arm tourniquets. If the hand is acutely injured and bleeding it will be advantageous to inflate the sphygmomanometer cuff prior to the clean-up, so that as one scrubs and thoroughly cleanses and irrigates the wound there will be no profuse bleeding. After one has completed the clean-up of the extremity and draped the field with sterile drapes, the tourniquet can be deflated. The operator then begins at the fingertips to wrap with a sterile ace bandage and wraps to within one inch of the tourniquet, in order completely to empty the extremity of blood. The tourniquet is then inflated again.

The tourniquet is allowed to remain inflated to 300 millimeters of mercury in the adult for one and one-half hours. If the operation has not been completed, the pressure is reduced to zero for fifteen minutes, during which time light pressure to the wound controls any oozing. The hand and arm are rewound with the elastic bandage and the sphygmomanometer cuff is then reinflated to 300 millimeters of mercury for another one and one-half hours. In children under twelve years of age, 260 millimeters of mercury is used as a level of pressure using the same technique. The same type of tourniquet technique is used for all operations on the infected hand, except that the

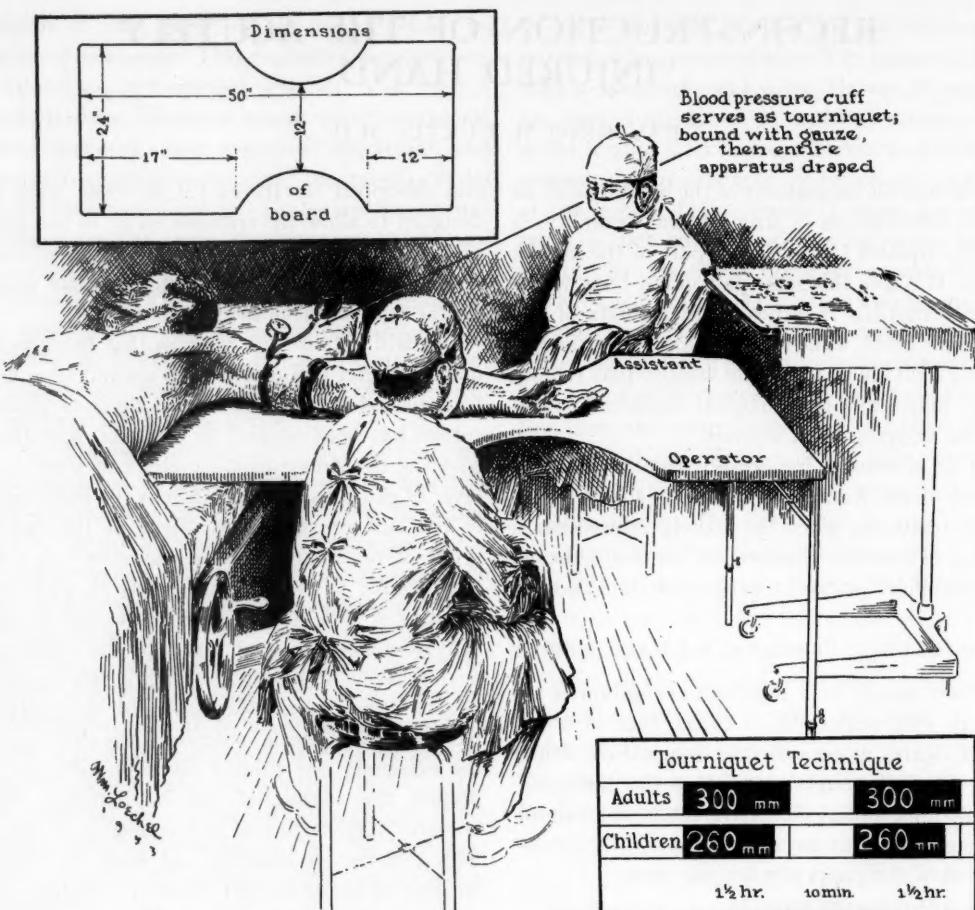


FIG. 1. Diagram of special arm board for hand surgery, showing tourniquet technique.

arm is elevated to empty the extremity of blood instead of wrapping the extremity to express it.

We have seen no serious complications from using the technique described above. It is important, however, to realize that the cellular enzymes are being exhausted during this period of ischemia. If the ischemia is too prolonged without release, one may see tissue changes such as abnormal swelling postoperatively which can be attributed to this ischemia, as has been pointed out by Bruner (3). The fact that the pressure of the tourniquet is distributed over such a wide area is the reason such a technique can be carried

out without fear of peripheral nerve damage. On the other hand, if one were to leave in place a tourniquet only a half inch in width about an extremity for such a period of time, then this pressure over such a narrow zone can produce irreparable nerve damage.

In most civilian hospitals today, the operative schedule is as a rule so full that one may find difficulty sandwiching an acute hand case between the posted cases. If one is faced with several hours delay because of such a circumstance, one should thoroughly prepare the injured extremity in the Accident Room where the

case is first seen for examination. Preparation should consist of shaving the extremity, a thorough scrubbing with soap and water, and an irrigation of the wound with sterile normal salt solution. The hand is then enclosed in the sterile dressing to await surgery. It is my own preference that the dressing directly over the wound be saturated with normal salt solution, and that the entire hand dressing be enclosed in a sterile plastic envelope. This dressing remains in place until the patient reaches the operating room. The wet dressing directly over the wound prevents the wound edges from sealing together, and thus keeps the wound an open wound until the patient is ready for definite surgery.

The treatment of the injured hand itself will be discussed under the following headings:

1. Replacement of Skin Loss.
2. Tendon Injuries.
3. Peripheral Nerve Injuries.
4. Amputation.
5. Fractures of Metacarpals and Phalanges.

SKIN LOSS

The final result in the serious injury to the hand will in many instances depend upon

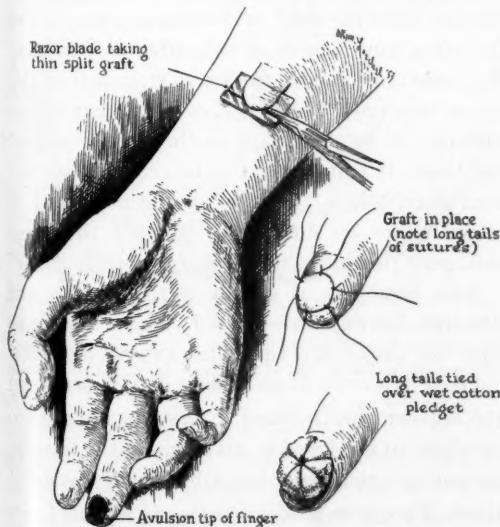


FIG. 2. Drawing shows use of the split thickness skin graft for coverage of minor avulsions at the tip of the finger.

whether adequate skin covering was provided at the time of the initial treatment. In most instances, with the aid of antibiotics, debridement, and thorough cleansing of the wounds, primary closure can and should be effected by the type of closure which seems best suited for the wound. Where there has been actual loss of skin one may need to utilize one of the following plastic procedures:

1. Local skin flap shifts.
2. Split skin grafts.
3. Dermatome skin grafts.
4. Full thickness skin grafts.
5. Pedicle skin flaps from adjacent fingers or other parts of the body.

In some instances, one may feel that the wound is so contused and contaminated that it is not suitable for primary closure. In this instance the hand can be debrided and thoroughly cleansed and then encased in massive wet dressings for forty-eight to seventy-two hours. This type of wound dressing, together with antibiotics, will usually allow one to close most wounds by some type of the above technique in forty-eight to seventy-two hours.

In Figure 2 one sees diagrammatically the application of a split thickness skin graft, removed from the forearm and applied to a small avulsion of skin on the fingertip. Here the actual loss has consisted mainly of skin, there being a good bed of subcutaneous tissue beneath, and there being very little, if any, of the terminal phalanx exposed. The split thickness skin graft should be used in cases of this type of injury where one feels that as the split thickness skin graft contracts, it will be able to pull forward the normal skin of the finger, so that the resultant defect at the end of the year will show very little evidence of the original injury, except for the much contracted split thickness graft.

The thick dermatome skin graft in the adult (this would be a graft between 0.018 and 0.020 inches in thickness which represents approximately two-thirds of the full thickness of the skin) gives good permanent skin coverage for



FIG. 3. Drawing illustrates extensive avulsion of dorsum of hand and use of thigh as donor area for dermatome skin graft.

most of the skin avulsions of the dorsum of the hand or the palm of the hand, where there has not been tendon loss and where bone is not exposed. An example of this type of dermatome skin graft is illustrated in Figure 3, where we note that there has been a complete avulsion of the skin on the dorsum of the hand, exposing the tendons. The tendons are intact, as is the peritenon over the tendons. It is this type of case in which one can obtain an excellent clinical result, using such a dermatome skin graft primarily.

There are times when one may prefer a full thickness skin graft. Particularly is this true if one is excising a scar in the palm of the hand, where one wishes to be certain that there will be no shrinkage of the graft once it is inserted. Figure 3 illustrates such a problem in the palm of the hand and points out two donor sites, one in the forearm, the other in the antecubital fossa, where such full thickness grafts can be taken.

A direct skin flap shift is indicated where bone and joint surfaces are exposed and may be prefer-

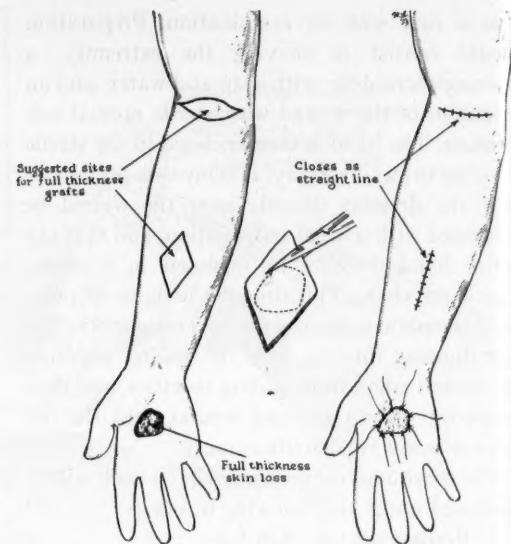


FIG. 4. Drawing illustrates the use of the full thickness skin graft for replacement of skin loss. Note how sutures are left long to be tied over pressure dressing on graft and how graft is patterned to fit the defect perfectly.

able in some instances where a tendon is exposed. This is particularly true where tendon is exposed on the flexor surface of the fingers. One has little difficulty rotating skin flaps on the dorsum of the hand or from the sides or dorsum of a finger. On the other hand, one must remember that palmar skin does not have the ability to stretch that the dorsal skin does, and hence, one may experience difficulty in rotating flaps on the palmar side of the hand. It is important to be certain that the area from which the flap has been shifted is closed either by suturing or by split thickness skin graft primarily, to avoid abnormal scarring.

Two examples of pedicle flap coverage are illustrated in Figures 5 and 6. In Figure 5 we note that the amputated tip of the thumb has been covered by a cross finger pedicle flap, raised from the adjacent index finger. Cross finger flaps are excellent to use for skin coverage on the fingers, for one as a rule never has subsequently to defeat them. They give good cosmetic, as well as functional, cover. In addition, the arterial and venous circulation is so excellent in the flaps that one

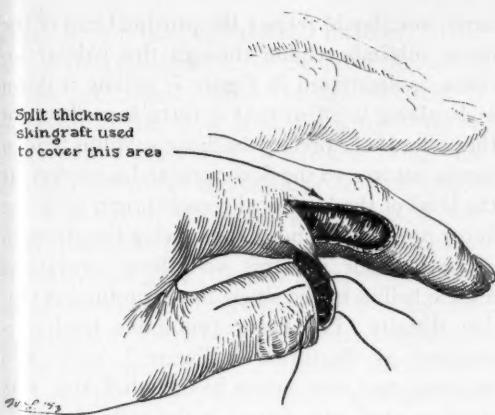


FIG. 5. Drawing illustrates the use of cross finger pedicle flap for coverage of amputated thumb.

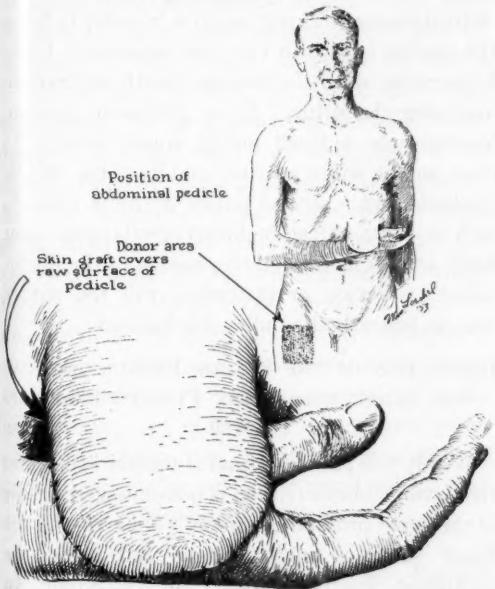


FIG. 6. Drawing illustrates use of abdominal pedicle flap for coverage of extensive defect of wrist and hand. Note that abdominal donor site is covered primarily with dermatome skin graft. This graft also lines the raw surface of the pedicle.

rarely loses such a flap if care is taken to be certain that the base is not kinked. These flaps, as a rule, can be separated within ten to twelve days. One should always skin graft the donor site with a split thickness skin graft at the time the flap is raised. Such a procedure is also carried out

where one raises palmar flaps for use on the fingertips. The criticism of the palmar flap for fingertip coverage has been that the patient frequently complained of the painful scar in the palm of the hand where the flap had been elevated. This criticism as a rule will be eliminated if one will adequately care for the donor area with a split thickness skin graft at the time the flap is raised.

Figure 6 illustrates the pedicle flap coverage of a large area over the radial aspect of a forearm and hand, the pedicle being raised from the abdomen, and the donor site from the abdomen being covered with a dermatome skin graft cut from the thigh. In the case illustrated, the patient had lost the extensor and abductor tendons to the thumb, as well as sustained a compound injury to the radius and carpus. By the application of such a skin graft at the time of the initial debridement and cleanup of the wound, not only was this patient's recovery time much diminished, but also one prevented secondary infection with the residual stiffness and loss of function which follows.

TENDON INJURIES

I prefer the techniques of Dr. Bunnell (4) for primary tendon repair, using a No. 36 monofila-

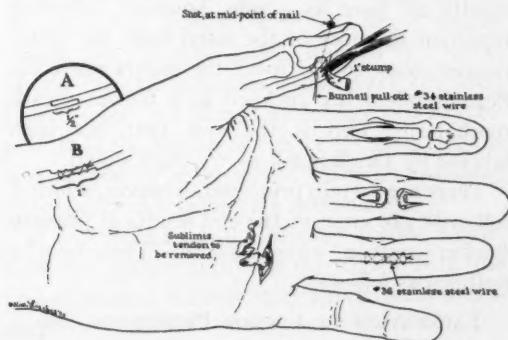


FIG. 7. Drawing diagrammatically illustrates methods of repair of tendons lacerated within the fingers. Index finger shows example of type of injury best treated by tendon advancement. Thumb illustrates tendon lengthening and advancement. Middle finger shows both flexor tendons lacerated and repaired as in ring finger, with excision of sublimis tendon, proximally and distally, and repair of profundus only.

ment stainless steel wire as a figure of eight suture in the adult and No. 38 stainless steel wire in children as illustrated in Figure 7. If one is repairing the flexor tendons at the wrist or in the base of the palm of the hand, in addition to the tendon repair the peritenon is repaired as well with interrupted sutures of No. 40 stainless steel wire or 6-0 silk.

The "Bunnell pull-out wire" technique is used only for insertion of tendons to the terminal phalanx. For this suture No. 34 stainless steel wire is used as illustrated in Figures 5 and 6. It will be noticed that the wire labeled "pull-out wire" has been brought out with both ends through a single skin opening and well up near the tendon insertion. Clinically it has been found that this allows for better motion of the tendon within the flexor tendon sheath, than is possible if this pull-out wire is allowed to fall proximally along the tendon and exit over the middle phalanx of the finger. In the latter case the patient experiences some discomfort with the flexion and extension of the finger as this wire attempts to move within the finger.

With laceration of the tendons at the wrist level and in the proximal part of the palm of the hand, one should obtain a satisfactory end result if careful repair has been carried out. The end results are poor as a rule, however, following repair in the area of the hand from the distal palmar crease to the tips of the fingers where the flexor tendons are enclosed in a fibrous sheath mechanism. This is the area that has been labeled by Dr. Bunnell as "no man's land."

There are certain principles, however, which if followed will improve the end results of primary tendon repair in "no man's land." These may be outlined as follows:

LACERATION OF FLEXOR PROFUNDUS AND FLEXOR SUBLIMIS TENDONS WITHIN THE FIBROUS FLEXOR SHEATH

If both the flexor profundus and flexor sublimis tendons are cut in this area, one should remove the flexor sublimis tendon distally at its insertion. Through a separate incision in the palm of the

hand, one should retract the proximal end of the flexor sublimis tendon through this palmar incision as illustrated in Figure 7, pulling it down and cutting it off so that it retracts well out of the palm. If one prefers the flexor sublimis tendon can be sutured to the flexor profundus tendon, at the level of the lumbrical muscle origin from the flexor profundus tendon thus giving the strength of both flexor sublimis and flexor profundus muscle bellies to the single flexor profundus tendon distally. The flexor profundus tendon is repaired, as illustrated in Figure 7, with #36 stainless steel wire suture in the adult and #38 stainless steel wire suture in the child. In addition to this stainless steel wire suture, one may desire to insert a few interrupted 6-0 silk or #40 stainless steel wire sutures in order to bring the tendon ends into very fine alignment. Carefully excise all of the tendon sheath mechanism overlying the sutured flexor profundus tendon, leaving only a small pulley approximately $\frac{1}{4}$ of an inch in width near the middle of the middle phalanx, and a second pulley no more than $\frac{1}{2}$ inch in width at the metacarpophalangeal joint level. In this manner in no position of the finger, either in flexion or extension, will the suture line lie beneath the pulley mechanism.

LACERATION OF THE FLEXOR PROFUNDUS TEN- DON ALONE WITHIN THE FIBROUS FLEXOR SHEATH

If only the flexor profundus tendon is cut and the flexor sublimis tendon is not damaged, repair of the flexor profundus tendon is done leaving the flexor sublimis tendon intact and using the technique described above for the repair. In addition, excise the flexor tendon sheath except for the two pulleys, one at the metacarpophalangeal joint and the second over the middle of the middle phalanx, as described above.

LACERATION OF THE FLEXOR PROFUNDUS TEN- DON DISTAL TO THE INSERTION OF THE FLEXOR SUBLIMIS TENDON

This is the type of laceration which one encounters near the insertion of the flexor pro-

fundus tendon into the terminal phalanx. If one has less than one-half inch of the flexor profundus tendon left distally, then the best method of treatment of this type of injury is the "tendon advancement procedure" where one brings the proximal cut end of the flexor profundus tendon into a recess in the terminal phalanx of the finger, using the Bunnell pull-out wire suture as illustrated in Figure 7. A tiny stump of the distal profundus tendon is left inserted into the terminal phalanx, and is brought down and sutured to the proximal stump after it has been anchored to the bone by several interrupted #38 stainless steel wire sutures, to reinforce the bony insertion. Should this distal stump of the flexor profundus tendon be more than one-half inch in length, then if one is to use a tendon advancement type of procedure for the method of repair the flexor profundus tendon must be lengthened. This lengthening can be carried out at wrist level. However, it is best carried out at the level of the lumbrical muscle origin in the palm of the hand, for if one lengthens the flexor profundus tendon at the wrist level and then advances it one advances the lumbrical muscle to a position where it loses its efficiency, as the muscle is bunched into a ball in the hand by the advancement of its origin. If one attempts to advance the flexor profundus tendon more than one-half inch in the index finger, and more than one-quarter of an inch in the middle, ring and little fingers, without tendon lengthening, one's end result will be that of a flexion deformity of the finger.

LACERATION OF THE LONG THUMB FLEXOR TENDON WITHIN THE FIBROUS FLEXOR TENDON SHEATH

One may elect to do a primary tendon repair of the lacerated long thumb flexor tendon in this area, between the metacarpophalangeal joint and the insertion of the tendon into the terminal phalanx. If such a primary suture is carried out, one should excise the overlying tendon sheath—being certain, however, to preserve a pulley mechanism at the level of metacarpophalangeal

joint. On the other hand, one may elect to do a tendon advancement type procedure at this level as illustrated in Figure 7. Where the distal stump of the tendon is less than one-half inch in length, then one may advance the tendon into the terminal phalanx without doing a tendon lengthening. If the distal stump is greater than one-half inch, then one must do a tendon lengthening procedure—such lengthening being carried out at the wrist level—as illustrated in Figure 7.

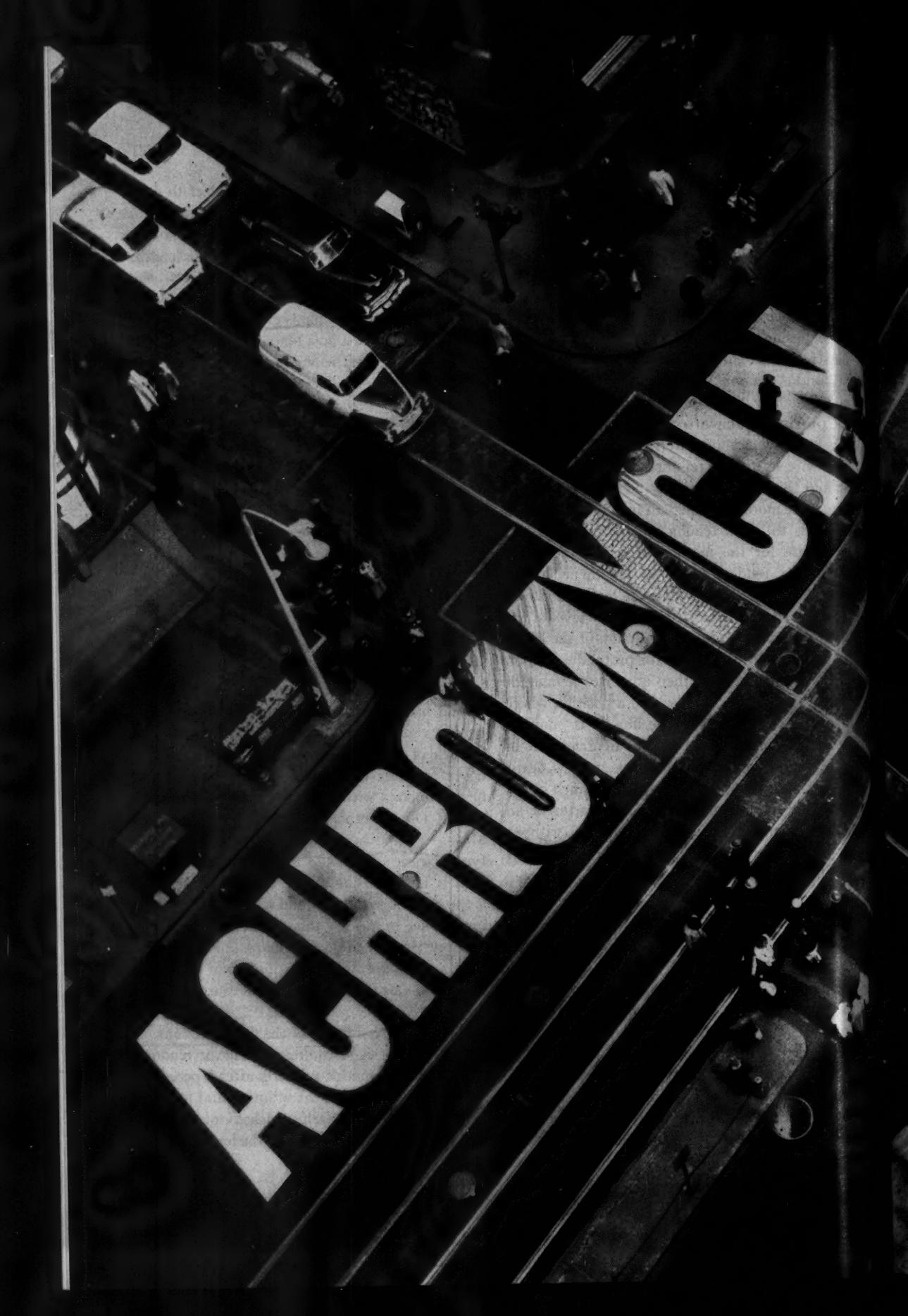
SHOULD PRIMARY TENDON REPAIRS BE PERFORMED IN "NO MAN'S LAND"?

One is constantly faced with the necessity of deciding whether to do a primary repair of the flexor tendons in this area, or whether to simply close the laceration in the skin repairing the digital nerves if they are lacerated, and then repair the lacerated flexor tendons by tendon graft technique using the palmaris longus or one of the long extensor tendons of the 2nd, 3rd or 4th toes at a later date. If this is to be the method of repair one should wait 4-6 weeks after the initial injury, when all of the reaction in the wound has subsided before proceeding with the tendon grafting. There are several authorities in the field of hand surgery, who feel that one should never attempt to do a primary repair of the flexor tendons within the fibrous flexor tendon sheath. On the other hand, Bunnell (1), Koch, Mason (5) and others feel that given the ideal type of case, one should attempt a primary repair. It is the feeling of this latter group that it is the character of the wound which is of primary importance in making this decision.

If one decides to do a primary tendon repair, then one should approach this repair with the idea of making it a two-stage procedure if necessary.

1. The primary repair of the flexor tendons.
2. A tendolysis of the repaired flexor tendons if they do not function properly after a period of physiotherapy and special splinting and use.

It is the wound itself which is of primary importance and not necessarily the length of time

An aerial black and white photograph of a city street at night. The scene is filled with the headlights and尾灯 of numerous cars, creating a dense pattern of light and shadow. A large, rectangular bus is positioned in the lower-left quadrant, its body partially illuminated by its own headlights. The street is marked with white dashed lines and solid white lines, defining lanes and crosswalks. In the upper right, a few small figures of people are visible walking on the sidewalk. The overall atmosphere is one of a bustling urban environment captured from above.

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¹Posner, A. C., et al.; Further Observations on the Use of Tetracycline Hydrochloride in Prophylaxis and Treatment of Obstetric Infections, *Antibiotics Annual 1954-55*, pp. 594-598.



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from injury to time of repair. Frequently one sees patients within an hour after a laceration by fishing knife, oyster shell or human bite, in which already there is evidence of infection about the wound, and certainly in such an instance one should never attempt primary repair of the lacerated tendons. Flynn (6) has pointed out the importance of not carrying our primary tendon repairs in a finger which is badly crushed and macerated. He has found that where there is a great deal of tissue damage, one is apt to see secondary infection develop. On the other hand, one frequently sees a patient who has had a finger lacerated with a sharp knife, and the initial wound care had been thorough by a company or family doctor. In such an instance, one may feel that the character of the wound and the wound treatment has been such that there is no contraindication to doing a primary tendon repair even after the six hour interval.

POSTOPERATIVE CARE IN TENDON INJURIES

Following repair of the flexor tendons, the hand is immobilized in a posterior plaster splint with the wrist slightly flexed and the fingers flexed. One can begin protective active motion with the hand in the splint in this position at the end of two and one half weeks. Such motion will be quite limited however until the plaster splint and the pressure dressing are removed at the end of three weeks postoperatively. Physiotherapy and active and passive motion are then begun three weeks following the tendon repair, and it has been found advantageous at this time to begin to start light rubber band traction on the fingers to obtain extension, and at the same time to give the patient some elastic type of resistance to flex the fingers against.

REPAIR OF THE EXTENSOR TENDONS

For repair of the extensor tendons over the dorsum of the hand or at the wrist level, the same type of figure of 8 No. 36 stainless steel wire suture is used. When the extensor tendon mechanism is lacerated over the interphalangeal

joints No. 4-0 silk is used for repair. When the laceration occurs directly over the phalanx, # 38 stainless steel wire can be used.

The extensor tendons lacerated over the dorsum of the hand are immobilized with the wrist in extension, and the fingers in extension at the metacarpophalangeal joint, however the proximal interphalangeal joints are allowed to fall into a slightly flexed position. This position is maintained for three weeks. When the wrist extensors have been divided, it is advisable to maintain extension of the wrist for four weeks by plaster splint.

SECONDARY TENDON REPAIR

Secondary tendon repair should be carried out as early as possible following the injury, as soon as the wound has healed and the scar has softened. Rarely is one able to do this under four weeks. Sometimes it is necessary to wait as long as twelve weeks, giving physiotherapy in the interval, before the wound is ready for re-exploration. If one postpones the repair longer than this interval, there is as a rule so much shortening that it is impossible to carry out a primary tendon suture and tendon grafting will be found necessary.

One should not attempt to carry out a secondary tendon repair within the fibrous flexor tendon sheaths of the fingers. Here, one should use a tendon graft, extending the graft from the profundus tendon in the palm at the level of the lumbrical origin, to the terminal phalanx in the finger.

TENDOLYSIS

Where one has carried out a primary tendon repair, and the patient has then been given a suitable period of physiotherapy and rubber band traction, and yet one has failed to achieve a good functional result, a tendolysis of the repaired flexor tendons is a very useful and rewarding procedure. At the time of tendolysis all of the scar tissue should be removed from about the tendon, and it may be helpful to place 0.3 cc. of a saline suspension of Hydrocortisone acetate (the type

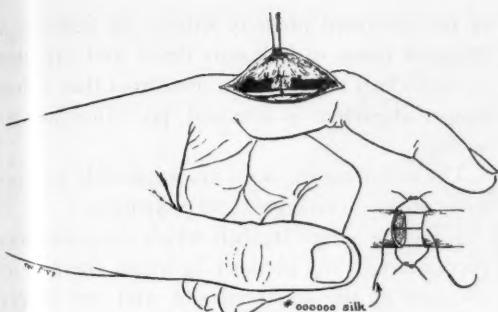


FIG. 8. Drawing illustrates technique of peripheral nerve repair, using perineurial suture of 6-0 silk.

used for interarticular injection) about the tendolysed tendon.

PERIPHERAL NERVE INJURIES

The digital nerves within the hand and fingers are extremely important ones, and if divided they should be repaired. If possible, these should be repaired primarily at the time of the original wound repair. On the other hand if one has difficulty in finding these nerves in a badly traumatized hand, then it is important that these be repaired secondarily. Technically, it is possible to repair the digital nerves as far as the distal interphalangeal joint of the fingers, repair being carried out as shown in Figure 8 with a simple interrupted perineurial suture of 6-0 silk. If these nerves are not repaired in the palm and in the fingers, in most instances there is a painful neuromata at the site of injury followed by considerable loss of function.

Controversy has arisen as to whether or not one should carry out primary repair of the lacerated median and ulnar nerves at the wrist at the time of the primary tendon and wound suture. If one is a skilled surgeon and is prepared to carry out a careful perineurial suture with 6-0 silk of these divided nerves, then such a primary repair should be performed at the time of the initial tendon and wound suture. On the other hand if one is not skilled in the suture of nerves, it is best to merely unite the two nerve ends with a single suture to prevent the retraction of the

nerves and then plan on a secondary nerve suture being carried out under the best conditions.

Where a peripheral nerve has been interrupted by a bullet, it is advisable in most instances to postpone the primary repair of the nerve for it is extremely difficult—at the time of the primary wound repair—to assess the degree of damage proximally and distally in the nerve. On the other hand after an interval of 8–12 weeks, at the time of secondary repair, one can adequately assess the degree of damage and resect the amount of nerve necessary for the proper repair.

AMPUTATIONS

There are times when amputation cannot be avoided. One must remember, however, that it is important to preserve as much length of the thumb as one can by utilizing all reconstructive techniques necessary. This same conservatism may be indicated with reference to other fingers as well, and one should assess each case taking into consideration the occupation of the injured individual. The same degree of conservatism may apply to many patients who have amputations through the proximal phalanx of one or more fingers, for the preservation of some proximal phalanx, particularly if several or more fingers have been amputated, may mean the difference between a hand that can grasp and pinch and a hand that is useless with only a thumb and palm to work with.

There are two major problems which one is faced with in amputations. The first is adequate closure of the amputation stump, and the second is a resection of the volar digital nerves.

The closure of the amputation stump may be accomplished by a variety of procedures which are listed below:

- Primary closure of the stump where adequate skin is available with or without some resection of bone, depending upon the availability of skin.
- Closure may be obtained by making lateral incisions on either side of the finger, creating two flaps—one dorsally and one volarly—which

are mobilized so as to close over the amputation stump.

c. One may rotate a dorsal skin flap over the amputation stump, and then cover the raw area on the dorsum of the finger so created by the flap rotation with a split thickness skin graft.

d. A pedicle graft may be applied to the amputation stump from an adjacent finger or from the palm of the hand, or from the abdomen, chest, or opposite arm.

Split thickness skin grafts are not good coverage directly over bone at the amputation stump, unless adequate soft tissue can be brought together over the stump before application of the graft. Pedicle flap coverage from adjacent fingers is a very useful procedure. However, one must be certain that such a graft is warranted as a means of coverage, and that none of the other techniques offer as suitable a method of closure. The reason for the latter recommendation is that despite one's most careful technique, one frequently ends up with some residual stiffness in the normal finger from which the pedicle flap was elevated.

Of equal importance to the closure of the amputation stump is the need for actual identification of the volar digital nerve to the amputated finger. These should be pulled down and cut off, so that the cut ends retract into normal subcutaneous tissue some distance from the scar of the amputation stump. This technique is outlined in Figure 9. A poor amputation stump with digital nerve neuromas caught in scar is an invitation to a causalgia syndrome, which may be followed by repeated amputations with no success once the pain syndrome has been established.

FRACTURES OF THE METACARPALS AND PHALANGES

We must strive at the time of original treatment to obtain alignment of the fractured metacarpals and phalanges. Malalignment leads to malfunction for rotation at a fracture site of the metacarpal or phalanx may lead to scissoring of one finger over another on flexion. Malposition

of the fractured phalanx within the finger is a frequent cause of adherent flexor and extensor tendons. It is important to remember that unless proper alignment is obtained, poor function results.

The following methods are applicable to fractures of the metacarpals and phalanges:

1. For the simple fracture which one sometimes encounters in the phalanx in which there is no mobility at the fractured site, and one simply wishes to splint the finger for a short period of time to protect the fracture, one may tape the injured finger to the adjacent finger using it as a splint, or one may use a simple aluminum molded splint keeping the finger in a flexed position. In this type of fracture mobilization for 2-3 weeks is adequate.

2. An excellent method of treatment is that illustrated in Figure 10 where one uses light rubber band traction, with the fingers in a slightly flexed position using either pulp traction by means of a pin or adhesive tape traction from the finger. It is important to point out that very little traction is necessary for the reduction and immobilization of the fractured metacarpal or phalanx.

3. The Kirschner wire fixation of fractured metacarpals and phalanges is an excellent procedure when indicated. It may be used either as a closed method such as one sees illustrated in

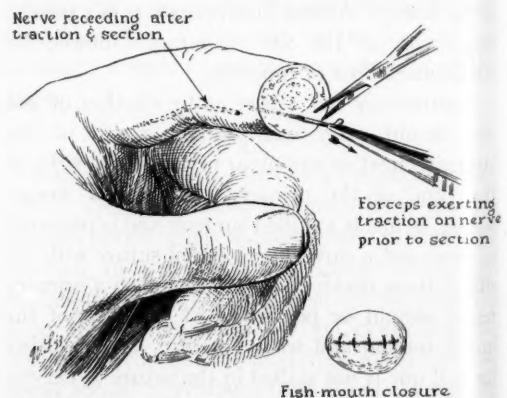


FIG. 9. Drawing illustrates method of digital nerve resection in finger amputation.

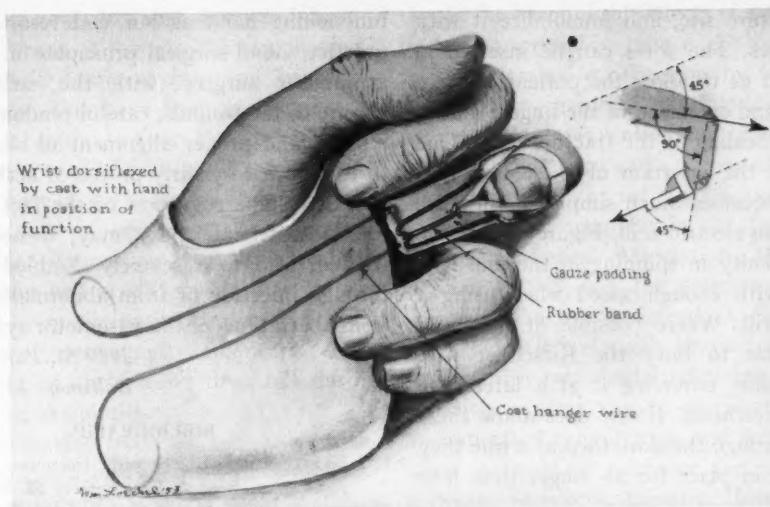


FIG. 10. Drawing illustrates technique of using rubber band traction for fracture of phalanges and metacarpals. Insert shows angles which metacarpophalangeal and interphalangeal joints should assume during traction. Note that coat hanger wire is molded to fit finger.

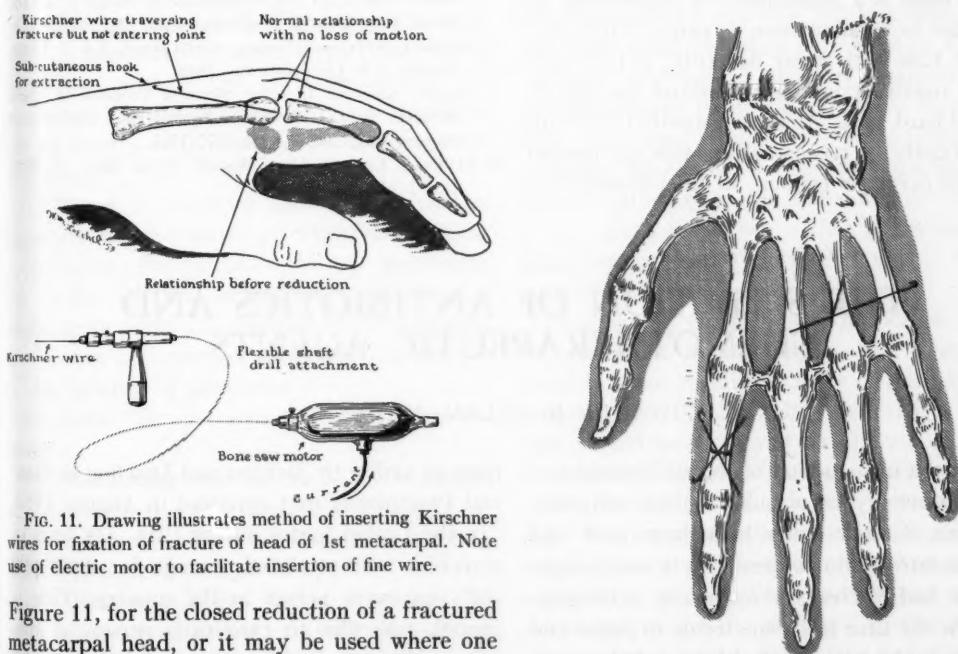
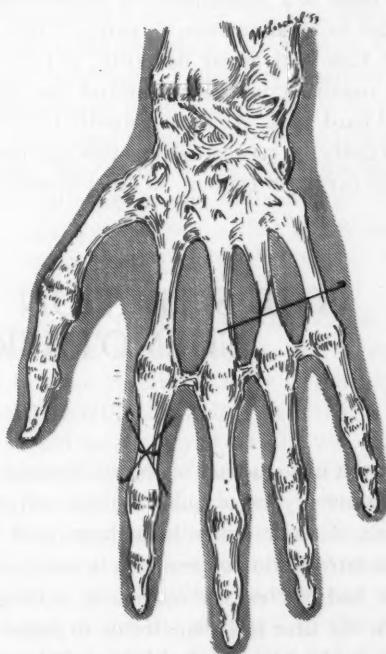


FIG. 11. Drawing illustrates method of inserting Kirschner wires for fixation of head of 1st metacarpal. Note use of electric motor to facilitate insertion of fine wire.

Figure 11, for the closed reduction of a fractured metacarpal head, or it may be used where one performs an open reduction on a fractured metacarpal or phalanx; and in addition, is of particular value in the compound fracture, Figure 11 and Figure 12. By this method one is able to properly



Kirschner wire fixation of fractures

FIG. 12. Drawing illustrates use of fine Kirschner wires for immobilization of fracture of phalanx and metacarpal. If possible wires should be inserted so as to allow joint motion while fracture is being immobilized.

align the fracture site; and immobilize it with Kirschner wires. The wires can be inserted in such a fashion as to allow the patient to have active flexion and extension of the fingers during the period of healing of the fractured site. One will find that the insertion of these fine Kirschner wires becomes much simpler if they are inserted with an electric drill, Figure 12, for one will have difficulty in spinning in the fine Kirschner wire with enough speed when using a small hand drill. Where possible, it has been found advisable to bury the Kirschner wire beneath the skin, removing it at a later date under local anesthesia. If one does allow these to protrude through the skin, then as a rule they should be left in place for no longer than four weeks.

SUMMARY

The hand is a masterpiece of engineering, so perfected as to allow man to perform the most minute task with great dexterity, yet of such rugged construction as to withstand the punishment of hard work. We are constantly faced with the necessity of reconstructing this mechanism from the ravage of trauma. In order to achieve a

functioning hand as our end result, we must practice sound surgical principles of meticulous atraumatic surgery, with the early primary closure of the wounds, careful tendon and nerve repairs, and proper alignment of skeletal fractures followed by early protected active motion.

We must be cognizant of the fact that even the most trivial injury may, if not properly treated, lead to a severely disabled extremity through infection or from abnormalities arising from aberrations of the vasomotor system.

2919 St. Paul Street
Baltimore 18, Maryland

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THE SELECTION OF ANTIBIOTICS AND CHEMOTHERAPEUTIC AGENTS

WARDE B. ALLAN, M.D.*

Since the introduction of the sulfonamides in 1936, various types of sulfonamides and combinations of these drugs have been used and with the introduction of penicillin it was thought that we had reached the millennium in therapy. But now the time has come for us to pause and take stock of what we have done and the problems that we have posed for ourselves. To quote

* Associate Professor of Medicine, The Johns Hopkins University School of Medicine, Baltimore, Maryland.

from an article by Jackson and Dowling in *General Practitioner* that appeared in August 1953, "In the United States during 1951, 324 tons of penicillin were produced, enough for 2,000,000 units for every person in the country. This is enough penicillin to cure each person of one attack of pneumococcal pneumonia. During the same year, 167 tons of streptomycin were produced, enough to treat 1,000,000 persons with pulmonary tuberculosis for an entire year or to

manage all the new cases that developed during the past 10 years. Although, chloramphenicol, chlortetracycline (aureomycin), and oxytetracycline (terramycin) have been in commercial production for only two or three years, 250 tons of these were produced in 1951, a quantity sufficient to provide for approximately 200,000,000 patient days of treatment. These figures are even more impressive when it is realized that more than half of all prescriptions written during 1951 were for antibiotics, and in 1952 even a higher percentage. Americans spent over one-third of their entire drug bill during these years for antibiotics.

Many persons are receiving antibiotics without accepted indications for their use and without apparent benefit. Some of these patients have adverse reactions and many others may be affected by the changing bacterial patterns or, by hypersensitivity reactions on later administrations of the drug. The hazards of antibiotic administration are sufficient to require restriction of their use to those illnesses for which they have an appreciable effect. Reactions can be greatly minimized by the following rules of therapy:

- (1) Make an accurate clinical and etiologic diagnosis before treatment whenever possible.
- (2) Treat the patient's illness specifically
(a) in the selection of the antibiotic, using a single agent when it is effective; (b) in the choice of the dose and route of administration and (c) in the duration of treatment.
- (3) Limit the use and time of therapeutic trials.
- (4) Be familiar with the course of the disease to be expected under antibiotic therapy.
- (5) Know the adverse consequences of treatment common to each of the agents.
- (6) Observe patients during treatment for early signs of sensitivity, toxicity or superimposed infections, and weigh the possible risks before continuing treatment.

These facts and simple rules are worth a little scrutiny. We would achieve a significant reduc-

tion in the harmful side effects of antibiotics and perhaps appreciably reduce the production of resistant strains or organisms by following one sound policy, namely, "Antibiotics should not be given in the prevention and treatment of the common cold or in cases of so-called 'flu' and 'virus infections' or for simple fevers."

Long et al., reporting in the *Journal of the American Medical Association*, 141: 315-317, October 1, 1949, raise the question of the proper antibiotics to use in infectious diseases. They state that it is "relatively simple" and elaborate on this with two charts indicating the drugs of choice in a great variety of infections. This is an important contribution and well worthwhile using as a basic reference for an intelligent approach to specific therapy. However, clinical experience in the past four or five years has created an ever changing concept of treatment. With each new broad spectrum drug that has been introduced it has been felt that almost all infections could be adequately treated. Unfortunately, universally sensitive organisms are not the rule and hardier species have developed since the newer drugs were first introduced clinically. Moreover, in many groups there is greater variation in the individual sensitivity to any given antibiotic so that generalizations with respect to a given species are no longer tenable.

This train of circumstances has led the clinician to resort to and rely on the laboratory tests. It is not within the scope of this paper to elaborate on the "in vitro sensitivity tests" that should be employed on all causal agents in infectious diseases. Needless to say, clinical results do not always parallel "in vitro" findings. Many intrinsic factors influencing disease in the host are impossible to measure in the laboratory, namely, the concentration of the antibiotics at the site of infection, the number of organisms present, the extent and degree of inflammatory reaction, and the immune response of the host. Despite these immeasurable factors the finding of strongly resistant or com-

pletely insensitive etiologic agents in the laboratory almost always precludes a gratifying therapeutic result. On the other hand, the finding of sensitive organisms *in vitro* almost always gives rise to success *in vivo*.

There are many valid reasons for administering more than one antibiotic at a time. For instance, if a mixture of organisms of differing sensitivity to the antibiotics are present, two or three such combinations may be employed. The most compelling indication for using such combinations is the fact that clinical experience has shown that in certain diseases a higher percentage of cures is obtained by the administration of two or more drugs than when either is used alone even in higher concentrations. Garrod, in the British Medical Journal for May of 1953, urges the use of combined therapy. He feels that it is urgent in the undiagnosed case, in mixed infections and in the prevention of toxic effects. However, premature and blind therapy may obscure a diagnosis and should not be instituted until adequate cultures from such cases have been obtained for complete bacteriologic analysis.

Combined therapy can be, but is not always, the achievement of a synergistic effect. A classical example *in vitro* of this is in the instance of streptococcus fecalis. This organism is usually strongly resistant to penicillin. If, on the other hand, streptomycin is added to a culture, even in a concentration that would be completely ineffective if used alone, it gives rise to complete sterilization of that culture. In cases of streptococcus fecalis infections, chloramphenicol by sensitivity tests would be the drug of choice, but the combination of penicillin and streptomycin usually proves to be more effective clinically. Unfortunately, there is no simple reliable test for measuring synergistic combinations of antibiotics.

The constant shifting of relative sensitivity of various organisms makes it impossible to establish reliable guides in therapy from past clinical experiences. Fortunately, there are some

organisms which are universally unchanging in their sensitivity to penicillin, namely, the pneumococcus, the gonococcus and the beta hemolytic streptococcus. On the other hand, we must nearly always rely on the laboratory to determine the sensitivity to the various antibiotics in infections caused by the coliform bacilli, proteus, staphylococci and alpha streptococci.

A great deal has been written about "interference" or "antagonism" in drug combinations. It is well known that aureomycin and penicillin are "antagonistic" *in vitro* and in pneumococcal meningitis. However, many observers feel that where phagocytosis of organisms has taken place, as in pneumonia, "antagonism" or "interference" is not encountered. In this I would agree, based entirely on clinical observation. Antagonism demonstrated *in vitro* is dependent on certain factors so that by using higher concentrations of the bacteriolytic antibiotic antagonism probably will not ever occur *in vivo*.

It is interesting to speculate on events if the sulfonamides had been the only antibacterial therapy developed. Practically all species of organisms can become resistant to these drugs and resistance to one involves resistance to all others. Garrod (British Medical Journal 1: 205-210, Feb. 3, 1951) has pointed out that the mechanism involved is the formation by the organism of a sulfonamide inhibitor, proven in many cases to be para-aminobenzoic acid. The first organism observed to be resistant was the gonococcus. It is of interest that, as the resistant strains developed, failures in treatment developed. This resistant strain has been demonstrated to be drug resistant *in vitro*. Fortunately, no such sequence of events occurred with the closely related meningococcus. In fact, meningococcus meningitis is the only condition in which sulfonamides still are used in preference to penicillin. Resistant strains of pneumococcus and hemolytic streptococcus have developed but have not been common. It must be remembered that any resistance to penicillin

demonstrated in vitro is usually reported when the organism is not inhibited at a concentration of 1 unit per cc. of penicillin. Of course, far larger concentrations of penicillin can be achieved in the blood so that in vitro reported resistance does not imply that the organism is completely resistant in vivo. Sulfonamides still are used commonly in urinary tract infections and a single sulfonamide, gantrisin, is the most effective. It is of interest that multiple sulfonamides are often more effective than any single sulfonamide.

Another important point is that all species of bacteria can become highly resistant to streptomycin, and often rapidly. This resistance is seen in vitro as well as in vivo. Resistant strains of coliform bacilli are being identified in patients who have never received streptomycin. This raises a point that such resistant strains are probably being disseminated by treated patients. Such an observation poses a critical problem as to the advisability of the widespread practice of the prophylactic use postoperatively of the combination of penicillin and streptomycin. Resistant strains of organisms are being identified with practically all the antibiotics. Thus far the supply of new antibiotics has more than matched the capacity of bacteria to resist them, but if this supply should cease the time may come when a few of the more enterprising species may flourish more or less unhindered. In other words, are we reaching a point of diminishing returns?

With these unsettling observations it is wise to reiterate that we must use the antibiotics judiciously and only in cases where they can be effective and then only after proper sensitivity tests have been applied to the offending organism.

We may apply a few general rules as to the choice of antibiotics:

I. Sore throats due to the beta hemolytic streptococcus are not greatly benefited by antibiotics and other chemotherapeutic agents. Such cases run a similar course whether treated

or untreated. But if there is appreciable regional lymph node involvement, penicillin will be of great benefit.

II. Pneumococcal infections respond rapidly to penicillin and this is the drug of choice.

III. Meningococcus infections are best treated with sulfadiazine primarily and in conjunction with penicillin.

IV. Salmonella infections respond to chloromycetin. In view of the reported cases of aplastic anemia known to develop after the repeated use of this drug in the same individual, it would be wise to limit its use to those conditions where chloromycetin alone is efficacious.

V. Bacterial endocarditis should be treated with the antibiotic or combinations of same to which the species is sensitive in vitro. Time is of the essence in this condition so that after repeated blood cultures have been obtained penicillin should be given in large doses, adding the specific antibiotic or combination of same to which the organism obtained is most sensitive.

VI. Staphylococcus infections, as we have mentioned above, come to the fore because of the resistant strains of this species that have developed. Such infections are best treated with massive doses of penicillin plus erythromycin.

VII. Tuberculosis is a disease that is best treated under the guidance of those experienced in this disease. Streptomycin, paraminosalicylic acid and the isoniazides in various combinations are employed.

VIII. Mixed infections, such as those encountered in chronic bronchial and pulmonary disease, respond to the broad spectrum antibiotics such as aureomycin, terramycin and achromycin.

Needless to say, it is impossible to cover all infections, but we should apply the rule that antibiotics and chemotherapeutic agents should only be used in those cases where clinical experience has proven that there is a reasonable chance of therapeutic success and, finally, when these agents are used, they should be used more

or less specifically after proper in vitro sensitivity testing of the offending organism.

*6 E. Eager Street
Baltimore 2, Maryland*

Addendum: Several new antibiotics and new combinations of antibiotics, which have proved to be very efficacious against a wide variety of organism, are now being used.

BALLISTOCARDIOGRAPHY

MARTIN L. SINGEWALD, M.D.*

This presentation is based on the work of a group consisting of: Baker, B. M., Jr., Scarborough, W. R., Talbot, S. A., Davis, F. W., Jr., Mason, R. E., Deuchar, D. C., Lore, S. A., and Singewald, M. L. supported in part by a grant (H-327) from the National Heart Institute, National Institutes of Health, Public Health Service and in part by a grant from the Life Insurance Medical Research Foundation. Dr. Scarborough and Dr. Deuchar are Howard Hughes Foundation Fellows.

The full text was given as a Morning Lecture at the Chicago, Illinois meeting of the American College of Physicians, April 8, 1954. The paper has been accepted for publication in the *Annals of Internal Medicine* and for this reason will not be reproduced here.¹

In summary, Ballistocardiography is considered from its historical background. The present empirical approach is reviewed.

Data collected on a series of patients with coronary artery disease and on a series of normal controls are analyzed. These data indicate that the differentiation between normal persons and patients with coronary artery disease is not sufficiently wide with the present state of the method. There is evidence that abnormal ballistocardiograms from subjects below the age of 50,

and normal ballistocardiograms on subjects above the age of 60, may be of some diagnostic significance. The use of a cigarette test is discussed, and this test may possibly increase the differentiation between the normal subject and the patient with coronary artery disease. Physical analysis of the systems of ballistocardiography presently in use, reveals defects in all. Newer "aperiodic" ballistocardiographs give different tracings, but the value of these is not known as yet. The future of ballistocardiography lies in the physiological realm. Much work needs to be done to improve the methods and to correlate the tracings with the physiological events of the cardiac cycle. Long term follow-up studies are needed to evaluate fully the diagnostic merits of this technique.

Until more is known about this complex field, ballistocardiography should be considered a promising, though still experimental method. The physician should be aware of the danger of making a diagnosis of coronary artery disease based only on an abnormal ballistocardiogram until the significance of such records is more clearly understood.

*11 E. Chase Street
Baltimore 2, Maryland*

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* Department of Medicine, The Johns Hopkins University School of Medicine and Hospital.

CURRENT CONCEPTS RELATIVE TO CARCINOMA OF THE BREAST

PANEL DISCUSSION

MODERATOR: JOHN M. T. FINNEY, JR., M.D.

PANEL: HUGH H. TROUT, JR., M.D., *Roanoke, Virginia*

WILLIAM B. HUTCHINSON, M.D., *Seattle, Washington*

WALTER C. MERKEL, M.D., *Baltimore, Maryland*

MURRAY M. COPELAND, M.D., *Washington, D. C.*

JOSEPH H. BURCHENAL, M.D., *New York, N. Y.*

Introduction

DR. JOHN M. T. FINNEY

I'll not introduce the Panel, I'll name them. To my left is Hugh Trout, Jr., who very appropriately is on this Panel. His father, you may or may not know was an ex-resident at the old UPI Surgery. Hugh is an ex-resident in surgery at this hospital and both he and his father for many years have been very much interested in the problem of Carcinoma of the breast.

Next to him is Dr. Bill Hutchinson of Seattle. He was with us for several years. He has traveled a long way to be with us.

Next is Dr. Burchenal, from the Memorial Hospital in New York. He talked yesterday on chemotherapy in Carcinoma, and it is fine to have him here to again cover that angle.

I am sure that all of you have not only heard but have read a lot that Dr. Murray Copeland has written on malignant disease. He is dealing with it constantly. He is Professor of Oncology at Georgetown.

Dr. Walter Merkel who is sitting at the extreme right isn't to hear this. I would rather have his surgical interpretation of tissue microscopy than anybody I know.

We have a very interesting subject to discuss. Certain features were brought out in one of the cases in the clinical-pathological conference this morning.

I am perfectly sure that all of us who see patients with carcinoma, also see inexplicable cases, that appear perfectly well over a long period. I can think of one breast case that I saw

personally for twenty-six years. She then had a recurrence. Microscopically the recurrence was the same as the original disease removed twenty-six years previously.

I saw another patient that had a local recurrence under a scar of a radical mastectomy in the chest wall, eighteen years after the original operation. I know of another case that had a massive pulmonary recurrence after eight years and died within two weeks of the time it was first discovered. She had been perfectly well for eight years.

One of the questions which I hope some of these gentlemen can give us some light on, is, what happened to the individual cancer cells over that period of years to keep them dormant. They must have dated back to the original disease. They must have been present at the time of operation, and then have suddenly blossomed later.

We are all interested in the question of predisposition of cancer. We know that in animal experimentation a line of small animals like mice and rats can be bred that are 100 per cent cancer susceptible. A similar group can be bred that are 100 per cent cancer resistant. Unfortunately with human beings, most of us are lucky if we knew our grandparents and very lucky if we knew the cause of death of our great grandparents. Heredities from the human angle are almost meaningless. We see families in which there are an excessive number of carcinomas, and not only of carcinomas but carcinomas of

the same organ repeated throughout that same family.

Is there any way that we can measure hereditary susceptibility?

In this day unfortunately there are also many drugs available and widely used by people who don't understand them. I am referring particularly to what I, for one, consider the absolute pernicious habit of many family doctors giving women at the time of menopause, hormone treatments over a period of years for minor hot flushes, headaches, etc. Does that in any

way predispose to later carcinoma of the breast in those individuals?

Personally, I think it does, but I can't prove it specifically. There are many, many angles from which to attack a problem such as this.

I shall start off by asking a question of the Panel.

Q. What, if any, is the influence of protracted administration of ovarian hormonal stimulants at the time of the menopause? I wonder if Dr. Burchenal would start the discussion.

DISCUSSION

DR. JOSEPH K. BURCHENAL: Unfortunately, I can say almost nothing about this. I have a vague recollection which I should have looked up more carefully of certain strains of mice in which estrogen administration will cause a high incidence of cancer in the breast, but that is a very fuzzy recollection. I would agree with Dr. Finney that it is potentially dangerous. Carcinoma of the breast comes from a type of normal cell which is deeply influenced by hormones. Any tampering with the soil or environment is a potential danger.

DR. COPELAND: I don't think we have any direct evidence. Dr. Maude Slye was able to breed cancer into strains of mice almost 100 per cent and by the same token she could breed it out again.

A very interesting piece of work was done by my colleague, Dr. Geschickter, in which he took castrate rats and by maneuvering the intensity of the hormone over various periods of time, produced not only dysplasias of the breast but produced a high incidence of cancer of the breast. Dr. Frank Adair has pointed out to us—of course in the early days when physicians were using hormones to an excessive degree more so than now—that he had one or two cases in which he thought that there might have been some hormonal influence in the development of cancer. However when one takes those dosages which affect and produce cancer in the experimental animal and translates that into a similar dosage which would have to be given to humans, it would be tremendously expensive and most families couldn't afford it. I believe that until we know that

the protracted use of estrogens in the females does not produce cancer, it is wiser not to use them.

Q. DR. FINNEY: I am going to alter the question and ask Dr. Trout how he feels about the question of castration in premenopausal cancer. Is it indicated? Is it desirable? Will it affect prognosis?

DR. HUGH TROUT: Back in the 19th century castration was tried in England. Since then it has been tried intermittently and dropped. I think Dr. Shelton Horsley, Sr., and his son, Guy, in Richmond, have given more impetus than anyone in this part of the country to this problem. Their results have been rather striking. However their series of cases are relatively small, certainly too small to be statistically significant.

Castration can be done either surgically or by X-ray. For many years we irradiated the pelvis in all premenopausal women. In more recent years because of Dr. Horsley's good results, I've been doing castration in practically all premenopausal women.

I have one very interesting group of cases which statistically speaking does not mean anything. Two years ago I had a twenty-nine year old girl come to me with a cancer of the breast. Two days after I operated upon her, her twenty-six year old sister was also seen with what I thought was a benign tumor. It proved to be malignant. The other sisters were gotten in. One of them, aged nineteen, had a benign tumor.

The following year, the nineteen year old half-sister of the two older girls was on her honeymoon. The day after she was married she noticed a lump

in her breast and rushed back to Roanoke. She had a malignancy. All three of them had fairly extensive axillary metastases. All three had castration following radical mastectomy.

Post-operatively it has been only two years, for two of them and a little over a year for the third. In these young women with extensive axillary metastases, I believe that there must be some factor in the family which causes a rapid growth and spread. I believe that if we had done just a radical mastectomy we would have expected at least one of the three by now to have shown some signs of recurrence. It is my impression on reviewing the brief literature available combined with my personal experience in a few cases, that surgical castration is wise.

DR. FINNEY: I am going to come back to you on this.

Q. With your knowledge of X-ray and radium, do you think there is any choice between surgical castration or radium or radiological castration?

DR. MURRAY COPELAND: Ablation of the ovaries by surgical techniques makes it 100 per cent effective unless there is a third ovary somewhere which must be a very rare thing if ever. Irradiation will do the job but it is more difficult because of the biological variations in reaction, to estimate at about what level an individual will have a complete ablation of the ovaries.

There is a method by which one can determine fairly accurately what has been accomplished in terms of ablation of ovarian function and that is the vaginal smear. If one carefully studies the vaginal smear and finds complete senile changes in the vaginal mucosa, it is fairly certain that the ovarian function has been destroyed.

DR. BURCHENAL: The feeling at Memorial Hospital is definitely that surgical ablation is preferable. If you are going to interrupt ovarian function you might as well have them completely out rather than just radiate them.

Incidentally, there have been experiments in mice particularly by Dr. Furth, who has shown the development of ovarian tumors from relatively small doses of radiation. Whether this would have any bearing I don't know, but I think it is generally better to have them out.

DR. FINNEY: If you will allow the moderator to say a word. One reason I asked that question was because of a specific case with which I was connected

and which, I think, is of certain interest. As a matter of fact my father and I, for a good many years bragged about doing a good bit of work along these lines. We very highly recommended and urged castration in the younger group of women with carcinoma of the breast. The particular case to which I refer was a woman on whom my father did a radical mastectomy. In the meantime he died and subsequently I had a frantic call from out West, eleven years after his operation. The patient was forty-one years old at the time he operated on her. She also had an x-ray castration, following the operation. Eleven years post-operatively she began to have pain in her back and pelvis. X-rays showed definite metastasis in the lower spine and the pelvis. She was now age fifty-two. The interesting thing was that six months before she began to have the pain for which she went to the doctor, and for the first time in the eleven years since she had had her x-ray sterilization, she began to have hot flushes. Within six months of that time she appeared with extensive bony metastasis.

Of course, one can do all kinds of speculation. It seems to me that after a satisfactory and complete x-ray sterilization, recurrence of menopausal symptoms eleven years later raises the question as to whether the sterilization was complete. It also raises the question as to whether you can persuade that individual to undergo an operation for operative sterilization.

Q. DR. STONE: In view of what has been said, I would like to ask the Panel to discuss the tendency to advise the administration of the pathogenic substitute as a treatment against recurrence in those who are past the menopause. It seems to me utterly contradictory to urge castration by any means available in those who are in their active sexual cycle of life, on the pretext that you are inhibiting the growth by removing a stimulating hormone activity. Then when they have naturally lost their hormonal activity, you give it to them. Can the Panel explain that to me?

DR. BURCHENAL: It is a little difficult for me to understand why you would do it as prophylaxis. You are speaking of a person who has a carcinoma removed completely as far as known and this was just for prophylaxis. I would not be in favor of that. If, on the other hand, you have a patient who has recurrent carcinoma or say, inoperable carcinoma

in the first place, and that patient is ten years post menopausal, then it seems to me the rationale is as follows: The carcinoma has grown up in an environment where there was lack of estrogen, and by giving estrogens you change the "gene" soil or environment and you may inhibit the growth of the tumor. On the other hand, starting at right after menopause, I would think it would be very bad. The rationale for this whole type of hormone therapy is that you have a cell which is presumably either dependent on estrogens or used to getting along without them and by switching the environment either with androgen or estrogen, you may change the situation.

There is a lot of difference between someone who has just passed the menopause and someone who is perhaps ten years past the menopause, as prophylaxis I would not see much rationale for it.

DR. FINNEY: Murray, do you want to add something to that?

DR. COPELAND: I agree with Dr. Stone and Dr. Burchenal. I don't think much of it as a prophylactic form of therapy. Strange to say, however, in dealing with the cancer cell that changing the hormonal environment seems to depress it in a certain percentage of incidences, not all of them by any means. There are those which are certainly sensitive to change from hormonal influences. It is true that in those women who are well past the menopause (5 yrs.), or who have had a complete hysterectomy and bilateral salpingo-oophorectomy, and with metastases in the chest wall and about the breast, some fifteen to twenty per cent of them will respond to estrogenic substances and show a regression of the disease.

It also holds that when the disease breaks through this hormonal inhibition, and suddenly the hormone is stopped again you may see a slight regression.

I don't think that we have any real explanation as to why the cancer cell has that proclivity. I do feel that one wouldn't gain anything by using estrogens as a prophylactic procedure.

DR. BURCHENAL: The general policy which Dr. Pierson and his associates in the metabolic group have been using is to take a premenopausal woman, for instance, and do an oophorectomy. Of the total group, they will find about forty-four per cent to be what they call "estrogen dependents." In other words they will be improved by castration.

That same group would be treated with testosterone after oophorectomy ceased to be helpful. Eventually they use cortisone. One of the thoughts in reference to cortisone is that perhaps it produces a medical adrenalectomy and thereby suppresses all activity of the adrenals. As a general rule, the estrogens and androgens are the more important therapeutic hormone. The shift to cortisone is a last resort.

Q. Do you continue the hormones at the same time or is it in sequence?

DR. BURCHENAL: In the estrogen dependent, we give cortisone alone. With some of the postmenopausal women we have been giving stilbestrol (Rx) and cortisone.

DR. FINNEY: Are there any other questions?

DR. BURCHENAL: I might say one more word about the use of estrogen. With a high dosage there may be vaginal bleeding. We find that by increasing the dosage still higher, the bleeding will stop.

Q. May I ask Dr. Burchenal a question? A patient of mine was castrated either shortly before or after menopause and now some years later has developed a recurrence. It has been suggested in order to determine whether the tumor is an estrogen-dependent type that she be given estrogen. If there is a flareup and a rapid increase in symptoms, then perhaps she would be an adequate candidate for adrenalectomy. I wonder if you would comment.

DR. BURCHENAL: I think that one has to look at this situation both from the practical viewpoint and from the research point of view. From the research point of view there is no question that an adrenalectomy would be worth trying. Dr. Pierson's figures show that of premenopausal women, forty-four per cent are estrogen dependent and are benefited. Of the group that are estrogen dependent and have been benefited previously by oophorectomy, fifty-three per cent will benefit by adrenalectomy. Of the other group, almost none will benefit. They are the ones who are nonestrogen dependent to start with. So I think it would be worth considering. On the other hand you do have the difficulty of maintaining someone after a total adrenalectomy. It could be done but infections are difficult to handle. You have to watch them closely. I think I'd try testosterone first and when testosterone failed to work, I'd try an adrenalectomy.

DR. FINNEY: The trouble with a subject like

this, of course, is that one can go on indefinitely and we have just an hour. With your permission I am going to shift the questioning to something that is being given a certain amount of publicity and a certain amount of support, not only in operations for breast cancer but in operations throughout the body.

Q. The question has been raised regarding the removal of the lymphatic glands along the mammary and intercostal vessels, even to the point where some surgeons advocate a shoulder girdle amputation. How far are we justified in going? To what extent can we push a radical procedure for the benefit of the patient?

Very definitely, radical procedures should be reserved for the benefit of the patient, rather than for scientific and technical satisfaction. I am going to ask Bill Hutchinson to start the discussion.

DR. HUTCHINSON: This is a hard question to answer, because there are so many factors that enter into the problem.

I became interested in this problem in 1949 after seeing a report by Richard Handley of London. He reported five or six patients upon whom he had found the intercostal nodes involved with carcinoma. I began to explore the intercostal nodes simply as a diagnostic procedure to see what percentage of my patients had lymph node metastases in that area. I found that one half of them had metastatic disease at the time I operated on them.

Eighty-one private patients were studied. I have revised my idea of what constitutes advanced disease. Many of these patients were advanced beyond the point of possible benefit from a radical mastectomy. In that three-year span, I did ten simple mastectomies, for carcinoma. Since that time I have done at least ten each year for extensive carcinoma.

The results in the follow-up on those patients who had positive intercostal nodes in my series was so poor that it has led me to do the following: In those patients upon whom I can prove metastatic disease beyond the confines of the anatomical area of a radical Halsted mastectomy, I perform a simple mastectomy plus irradiation. I do a meticulous, careful radical Halsted mastectomy in the other cases.

Q. DR. FINNEY: I wonder if Dr. Burchenal will tell us how they feel at Memorial about this problem.

DR. BURCHENAL: This is second-hand information

since I'm not a surgeon, however, I quizzed the breast service before I came here. I think they agree with Dr. Hutchinson's figures, but they put a different interpretation on what should be done about it. They have done approximately 162 chest wall resections on the assumption that if, as frequently does occur, the internal mammary nodes are positive that it is best to remove them. There have been no operative deaths in the last 115 consecutive cases. They found that of the inner quadrant lesions with negative axillary nodes, 14 per cent of them had positive internal mammary nodes. Those are the ones that would be completely lost, by doing an ordinary radical mastectomy. Whether they are going to be saved by doing a chest wall resection is open to question. In the group that had positive axillary nodes at the time of operation, 60 per cent of the inner quadrant lesions and 44 per cent of the outer quadrant lesions had positive internal mammary nodes.

I think it is important to digress a moment on radical as opposed to simple surgery. It may be that the radical operation should be saved for the very early case; the case that can really be benefited. There is no reason to do a radical operation when the cancer is beyond the scope of definitive surgery.

DR. FINNEY: The last statement of Dr. Burchenal is very interesting in view of past history. I can remember my father stressing the fact that the earlier the disease, the more radical one should be in its treatment. These are the patients you are going to save.

DR. COPELAND: When one begins to extend surgery to an ultraradical degree, you have to search your soul and determine whether or not you are going to have any real salvation. It depends upon the anatomical principles involved and certainly it will be proven or disproven statistically.

One group of surgeons believe that inner quadrant lesions which are early and which do not show a metastatic nodule at the second inner space, an extended radical operation may be worthwhile.

Morbidity resulting from resection of a portion of the sternum and a portion of the cartilages has not been discussed. There is definite morbidity involved.

I observed 109 cadavers being dissected by students and I had a good look at the mediastinum and its lymph node arrangement. I cannot under-

stand how dissecting out a few internal perimammary lymphatics is a curative procedure. As far as I know the cancer cell does not have an address to which it is going. I am sure it goes in all directions. I am going to let the enthusiasts work a while longer before I make up my mind.

DR. FINNEY: Our time is short. There is one member of the Panel that hasn't been called on and I am going to ask him a real question. This is the "Sixty-four Dollar" question.

Q. We have various types of growth in the breast. Is there any way to intelligently regulate the extent of our operation on the basis of predilection of site for metastasis?

DR. WALTER C. MERKEL: I think Dr. Finney will change his opinion about me when he hears this statement.

I find it quite difficult at times to determine whether a breast lesion is really malignant. Now, he is asking me to predict a course or manner of spread or extension. I always hesitate to offer an opinion as to the extent of surgery. In regulating the procedure for breast lesions, let us consider fundamentals.

Hyperplasia, seen periodically through the menstrual cycles may deviate from its course and produce a stage known as adenosis. In adenosis, there are also cysts, adenomas, fibromas or fibroadenomas. Such lesions are classed as fibrocystic disease of the breast. Any of these components are generally benign and yield to simple excision.

There is a type of fibrocystic disease where involution does not take place. In these breasts the ducts present a very productive lining, sometimes difficult to separate from papillomata. Such lesions are not as a rule segmental and one is justified to do a simple mastectomy. I am convinced that this form of mastitis may develop into malignancy.

I am not concerned about a papillary hyperplasia within a cyst. I am, however concerned by intraductal papillomata. This is a new growth. Foote

and Ackerman claim these are benign. They have reported four cases out of twenty-six which subsequently developed carcinoma of the breast. Intraductal papillomata probably seed or propagate within the ducts, consequently a quadrant excision is a minimum routine.

Paget's disease is associated with an excoriation and weeping type of eczema. My personal experience of nine Paget's nipples convinces me that the carcinoma arises in duct epithelium within the nipple. Therefore the spread may well be into any quadrant of the mammary gland, a radical should not be criticized.

Comedo mastitis is always a frozen section headache, in that, the duct contents generally drop out and leave a honey comb section to study. This type lesion is general and simple mastectomy is in order. Comedo carcinoma frequently presents a small focus where the neoplasm has infiltrated the supporting stroma, hence one can not be sure whether lymphatics have not been invaded, therefore radical mastectomy is not too radical.

The lesions stated form a group about which there is considerable controversy. I have not mentioned the full fledged carcinomas because the surgeon usually has his own ideas as to the course or type of surgery.

DR. FINNEY: I think Dr. Merkel extricated himself from that Sixty-Four Dollar Question pretty well. I'll still bet on him. I see that our time is up but Bill Hutchinson has a couple of slides he wants to show and after that we will adjourn.

DR. HUTCHINSON: I'm told the hour is late. However, I want to show our results.

During three years that we explored the intercostal nodes, we only had two that survived the three years. In 1952 and 1953, our survival rate in a very small series has been just a little better. Out of twenty-seven patients with intercostal node carcinoma only four survived for four years.

Component Medical Societies



ALLEGANY-GARRETT COUNTY MEDICAL SOCIETY

LESLIE E. DAUGHERTY, M.D.

Journal Representative

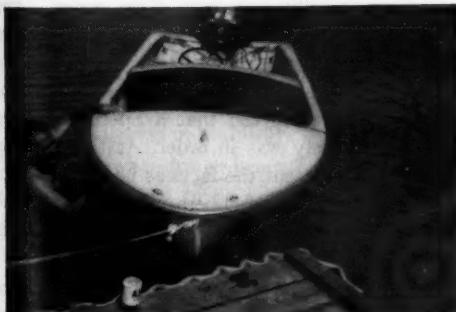
DOCTORS AT PLAY

The annual Memorial Hospital Golf Tournament, Cumberland, Md., was held in July.

Doctors Frank Cawley and William Alfred VanOrmer, were the victors in a very low score.



DR'S W. R. HODGES, DONALD B. GROVE, FRANK CAWLEY,
WM. A. VANORMER



Dr. James G. Stegmaier and his Plasticraft

Among those members of the Society having boats on Deep Creek in Garrett County, are: Doctors James G. Stegmaier, Emmett L. Jones, Howard L. Tolson, C. C. Zimmermann, Richard J. Williams and Mark M. Kroll.



Yachting Is A Regular Feature

Deep Creek Lake is a two hours drive from Cumberland, Maryland to Garrett County and is a first class playground, with aquatic sports a feature, aquaplaning, skin diving, fishing, canoeing and plain relaxation in the virgin pine and hemlock forests of what were formerly great alluvial plains and glacial lakes.

PERSONALS

Dr. Richard J. Williams, Cumberland, Md. has been appointed plant physician for the Kelly Springfield Tire Company. Dr. Williams, a life long resident of Cumberland, is a Naval Reserve Commander and a graduate of the University of Maryland.

Dr. Hilda Jane Walters, Frostburg, Md. suffered the loss of her mother, late of Florida, and a native of Virginia, who died September 9th.



Quiet and Rest is What the Doctor Needs

Dr. Leonard S. Cooper spent two weeks in Cumberland while on vacation. Dr. Cooper practiced in Cumberland from 1951 to 1954 and is now finishing a residency in general surgery at Sayre Surgical Clinic, Sayre, Pennsylvania.

BALTIMORE CITY MEDICAL SOCIETY

CONRAD ACTON, M.D.

Journal Representative

The May meeting of the Executive Board heard Mr. C. B. Nairn, Manager of Plant Community Relations, Insulator Department (PO Box 57, Baltimore) of General Electric Company discuss his Company's new insurance plan. He stated that the new program is in effect and is good. It prevents catastrophic expenses for the employee and yet is not paternalistic in that the employee pays a proportion of the costs. He stated that the danger inherent in the program is that it can be abused by physicians and pharmacists. He had asked to come before the Board to present the program in detail because he did not know how better to approach the City's medical men in order to forestall abuse. Approximately 2,000 claims per week have been filed by the 200,000 insured since it has been in effect. Only twenty physicians fees seemed to be out of line. On thorough investigation, however, these had all proved to be fair.

Dr. Kimberly reviewed the high points of the program and noted that an assignment of fee could be made out directly and that there were few exclusions for claims. The General Electric Plan is a step forward in many respects and seems superior to the Bethlehem Steel Plan that was brought to the Board's attention about two years ago. General Electric divides medical expenses into two broad groups. Type A Plan is \$25.00 deductible, pays the next \$250.00, after that the patient pays 15% of the bills and the Plan the remaining 85%. Type B Plan is \$50.00 deductible, then pays a flat 75% of all expenses to the annual maximum. Type B Plan further covers diagnosis, specialist treatment other than surgical as well as surgical, in hospital, home, or elsewhere, and many fringe benefits. The General Electric Plan is so different from the Bethlehem Steel Plan that interested practitioners are advised to acquaint themselves with details by inquiring directly of Mr. Nairn.

In regard to the Baltimore City Medical Society

catastrophic insurance, Dr. Kimberly stated that he had talked to Mr. Pollard and had been informed that 50% of our members had signed up for it. The date was to be extended to 15 June, and probably everyone could be blanketed in, even uninsurables.

The project of listing physicians according to specialty in the yellow pages of the telephone book was brought forward. President Ward appointed Dr. Fred M. Reese chairman of a committee to study this problem and present recommendations to the Board. This is a recurring proposal, but seems to die on the vine as succeeding committees have investigated.

Reports were made concerning refusal of the Baltimore Municipal Ambulances to transport emergency cases to hospitals on request of physicians. One instance resulted in loss of life. It was suggested that this practice was put into effect to prevent competition by the City with private ambulance companies. The secretary was directed to get the facts about ambulance dispatching from the Fire Department.

A communication from the State Board of Medical Examiners pointed out that the Homeopathic Board of Medical Examiners had licensed a man, not otherwise qualified, who intended to practice in Baltimore City. It was stated that legal action was being taken on a State level to outlaw the Homeopathic Board now licensing unqualified persons.

Dr. Wetherbee Fort, Treasurer of the Medical and Chirurgical Faculty, presented the Faculty's budget problem. He stated that a Committee had been designated to study the situation and make future plans, in the meantime the emergency Assessment passed by the House of Delegates at the last meeting was vitally necessary. Five major items were involved: Salaries, Library, Journal, Fringe Benefits, and Woman's Auxiliary. To each item exceptions were taken by one or more members of the Board. It was agreed that a Special Meeting of the City Society was in order. At the Meeting Dr. Fort could present the facts as he sees them to the Society, and the Members could vote on the special Assessment, there being no regular meeting until October.

A local hospital reported internal administrative troubles. One administrator sought the backing of the Society on the basis of its having made surveys

on request in the past. The Board, however, took the stand that the internal administrative adjustments of local hospitals were not within the authority of the City Medical Society.

President Ward was instructed to go forward with his letter to all the members calling attention to the importance of malpractice suits and the supreme necessity for witnesses to persevere, once they have agreed to testify, throughout the whole of a trial.

* * *

On Friday, 8 June, a Special Meeting of the Baltimore City Medical Society considered the special Assessment of \$20.00 levied upon its members, contingent upon concurrence of the Component Societies. Approximately 20 members were present when President Grant Ward opened the meeting and introduced the first speaker. Fifteen more came later, making a grand total of approximately 35. Most of those present hold, or have held offices in the Society. The cause of the poor showing was not apparent. It was a hot night, but not hot enough to explain that degree of apathy. Could it be that all other members tacitly agree on a strong State organization and are leaving the making of it to their duly elected officers? Could it be that all other members feel that the die is cast at the State level, and there is little an individual at Component level can do about it, even to save twenty dollars, and so they just do not try?

Dr. Wetherbee Fort, Treasurer of the Faculty, again presented facts given in his budget message and in letters and talks to Component Societies. Salaries and fringe benefits, library, journal, and auxiliary support have created an emergency. He hoped that the Committee grappling with the problem could set a realistic goal that could stabilize dues for the next ten years. He called on those present for constructive criticism and suggestions.

President Grant Ward stated that he felt the Faculty had a moral obligation to the devoted staff to give what fringe benefits it could. He considered the Journal to be a cementing link among the Component Societies and, considering what the Faculty has meant to organized medicine in the United States, this assessment seemed justified. Dr. Whitmer B. Firor moved that the action of the House of Delegates be approved. Dr. Douglas H.

Stone seconded it, and the motion was open for discussion.

Mr. Kirkman, Administrative Consultant of the Faculty, who has had a hand in past budgets, was called upon and made two points. He declared that "a budget is to be thought of as a working tool to implement a plan, not just a finished string of figures." He explained that the item "Transactions," in the schema distributed, covered a one-time expense to publish nine years of old records. Publication of these records has been directed by the Council, but there have never been funds allocated for it.

One doctor stated that he was in favor of the motion, but that it made his yearly dues contribution eighty dollars, equal to one per cent of his total income. He thought this was too high a proportion.

Dr. Webster Brown stated he was in favor of the Assessment, but suggested that it should be prorated according to the dues status of members. He considered the 11% increase in Journal expense was justified, considering the importance of the publication. Suggested questionnaires be sent out for further evaluation of its use, anonymous or signed.

Dr. Frank Morris favored the motion, called attention to union conditions where laborers pay forty-five dollar initiation fees and three dollars per month. Skilled workers pay two hundred fifty dollars initiation and ninety-nine dollars yearly dues with no benefits except union permission to hold a job if he can. Dr. Morris felt that professional men should not dicker about twenty dollars to salvage the State Organization that represents them.

Dr. Richard Shackelford called attention to the fact that in 1942 the Faculty had two secretaries, now has about eight (when they can be had) to handle the Faculty's increased volume of business. He does not want the Faculty to be a trade union and wonders if the Faculty is enlarging its activities beyond what it should encompass—beyond what the members generally want it to be. He suggests that three certain spheres include providing a meeting place, a library, and holding an Annual Meeting. Beyond these three, if we overextend ourselves, we can price ourselves out of existence. He recalled how Dr. J. M. T. Finney, Sr., resisted all efforts of the AMA and other groups to make the Faculty do their labor and expense for them.

Dr. Wetherbee Fort responded that the Faculty's load today certainly includes many requirements from the AMA and Woman's Auxiliaries.

Dr. Benjamin Jones favored the motion but suggested that the Journal should not miss any chance to economize and be self-supporting. In general he thought there seemed to be too many Journals, and the material in most of them not fresh enough. He felt that the ability to read the Transactions later in full in the Journal might keep members from the meetings.

Similar sentiments were rephrased by a series of discussants. None was able to bring out why the crisis had not come last year or the year before. Finally put to vote, the House of Delegate's action was approved unanimously and the meeting adjourned.

* * *

The regular June meeting of the Executive Board had a good deal of drama. Extremes seemed to meet under stress.

On the one hand Dr. Walter Graham, City Comptroller, and Dr. Huntington Williams, Health Commissioner, met to clarify for the Board their divergent feelings about the Medical Care Program as it is working in Baltimore. Much of what has appeared in the public papers was repeated. The Board expressed its appreciation of these gentlemen's courtesy in bringing the facts to them, tabled any possible action pending report of the Stebbins Committee due later this year.

On the other hand a young medical graduate reported he was being threatened by a community development group that his license to practice would be withheld if he disposed of property against their policy and wishes. No formal action was taken, except a general expression of dismay that such threats would be made by a lay group and appear credible. He was assured that medical merit alone should determine his licensure.

The latest development in the quest initiated by Dr. Moses Paulson for extension of insurance benefits came in the announcement by the Raymond K. Tongue Company that they were happy to inform the Board of their new insurance program which would extend the disability benefits to the members of the Society. Details to be announced by special letter.

A communication was reported from Dr. Otto

Brantigan who stated that he had been appointed chairman of a Committee to Save St. Joseph's Hospital. He denied rumors that the facility was closing and outlined the present state of the program to restore it to full function as soon as possible.

Problems concerning the Municipal Ambulance Service and conflict with private ambulance interests were reported. A ruling by Mr. John T. O'Malley, Executive Secretary of the Board of Fire Commissioners, that after 24 January 1957, all requests for Municipal Ambulances must come from the Admitting Office of the hospital, was disclosed. President Ward announced that he would attend a meeting of the Board of Fire Commissioners in the near future and call this critical problem to their attention in respect to the way it was developing.

Dr. John Eager Howard, chairman of the Program Committee, presented a list of programs proposed for the coming year. The titles are not exact as shown and may be reworded later.

5 October	Panel— <i>Management of Kidney Stones.</i>
2 November	Panel— <i>Hemorrhagic Diathesis and Blood Disorders.</i>
7 December	Annual Meeting—President's Program, to be announced.
4 January	Dr. George A. Perera, Columbia University— <i>Management of Hypertension.</i>
1 February	Dr. Robert W. Buxton, Maryland University— <i>Treatment of Phlebitis.</i>
1 March	Dr. Walter Bauer, Harvard University— <i>Gout, a Forgotten Disease.</i>

President Grant E. Ward announced the appointment of Dr. Kimberly to represent the City Society on the Planning Committee of the Faculty. Dr. Kimberly reported the action of the first meeting of this Committee had been to come to agreement on policy. The essence of the policy was to decide what the Faculty considered a State Medical Society's proper sphere of action to be, and its duty to do. The Committee then to see what other sources of income besides dues could be tapped to underwrite the costs of each sphere of action. Dr. Kimberly stated that it did not necessarily mean that the dues would be raised.

President Ward, after contacting the Board by

telephone, announced that he had written to the Mayor recommending reappointment of Dr. Huntington Williams as Commissioner of Health. The Board again concurred heartily in this action and said many fine things about Dr. Williams and his devoted career of service to Baltimore City.

* * *

The Executive Board met on Tuesday, 4 September after a two month summer recess. President Grant Ward announced the speaker for the December—President's—meeting of the Society would be Dr. Henry Doubilet, from New York University College of Medicine, who will speak on Diseases of the Pancreas. This rounds out Dr. Howard's program Committee's schedule for the coming year, and promises a splendid series of panels and lectures that all members should profit from and enjoy.

A meeting with the Baltimore City Delegates to the Medical and Chirurgical Faculty Semiannual Meeting in September was arranged for 11 September. Matters to be considered were outlined. It was agreed that a simple briefing on the background of each resolution should be sufficient.

Ever since the Faculty has been apprised of the status of the City Society's Executive Board as ex-officio Grievance Committee, the number of grievances coming to its attention has multiplied. This is as Mr. Anderson described as happening in the courts. Each grievance was given serious consideration. In one or two cases supplying of additional information brought insight and spontaneous alleviation of the grievance. In others it seemed to this writer that reading of the AMA booklet, "To All My Patients . . ." by one or both parties could have solved the difficulty.

Other items considered and referred either to committee or returned to the sponsor as inappropriate related to: help or hindrance of doctor's emblem on automobiles; Civil Defense; fees for telephone advice; profits of a non-profit hospital.



BALTIMORE COUNTY MEDICAL ASSOCIATION

DONALD L. SOMERVILLE, M.D.

Journal Representative

MEDICAL DISPLAY AT FAIR

"Accidental Poisoning in Children," was the topic of the exhibition of the Baltimore County



Members of Baltimore County Medical Assn. Committee at Timonium Fair: (left to right) DR'S. JOHN REHBERGER, CHARLES H. WILLIAMS, Chairman of exhibit; LOUIS Z. DALMAU, President of Society.

Medical Association at the Timonium State Fair this year. Prepared by the American Medical Association for use at state fairs, this exhibition was of importance to the general public and particularly to those responsible for the care of children.

Precaution against accidents that occur to children in the home, in the yard and in selected farm locations was emphasized. Prevention of accidental poisoning from drugs, miscellaneous household chemicals and pesticides was explained. Dr. Charles H. Williams, chairman of the display, urged everyone interested in child welfare to view the exhibition.

CECIL COUNTY MEDICAL SOCIETY

JULIUS CHEPKO, M.D.

Journal Representative

HONORING DR. H. A. CANTWELL

Cecil Countians gathered over one-thousand strong at the Thomas Avenue Elementary School in North East recently to do honor to Dr. H. A. Cantwell, who was completing fifty years of practice in their community. They presented to him a watch engraved, "To a beloved physician" for fifty years —dated June 10, 1956; they contributed to an unsolicited fund that amounted to over \$700 to be presented to the Union Hospital, Elkton, for a commendatory gift of Dr. Cantwell's choosing, and they joined in refreshments, again unsolicited, from two to after five in the afternoon. With Dr. Cantwell

was Mrs. Cantwell, who was presented with a bracelet with engraving "She also served"; daughters, Mrs. John Winslow of Dallas, Texas, and Mrs. Clark Lattin of Plainsfield, New Jersey, and five grandchildren; a son, John, of Paducah, Kentucky was unable to be present.

Mr. Joseph Grant "emceed" the afternoon, and retraced the life of Dr. Cantwell for the crowd which included Mrs. Mary Bell Hevron Reynolds of Elkton, the first baby he delivered, and Mrs. Curtis Reed and daughter, Mrs. Frank Conway, his first patients. Physicians of Cecil County and from Baltimore City lead by Dr. Erasmus Kloman, and General Alex Crothers, Director of the Port of Philadelphia, were present.

The North East celebration followed by a few days the honor given to the 1906 class of the University of Maryland by the alumni association. Dr. Cantwell and twelve others received diplomas on their fifty years of practice.

Dr. Cantwell was born and lived as a boy in Charlestown, the son of Harry Mitchell Cantwell and Louisa Black Cantwell. His preparatory education was at the Jacob Tome Institute at Port Deposit, from which he advanced to the University of Maryland in 1902. After graduation he served as resident physician at the University Hospital and as resident surgeon at the Hospital for Relief of Crippled and Deformed Children of Baltimore City—now Kernan Orthopedic Hospital. He practiced in his home community and Cecil County since opening his office in 1907. His career bridges the growth of the Union Hospital from the converted residence of 55 beds to the new and modern brick structure of 85 beds. He was chief of the surgical staff from 1931 to 1954.

Dr. Cantwell was three times elected President of the Cecil County Medical Society and this year is serving with Dr. Wallace Obenshain as President-Emeritus of the Society. He is a past vice-president of the Medical and Chirurgical Faculty of Maryland. Since 1931 he has been a Fellow of the American College of Surgeons and he is a Fellow of the International College of Surgeons. He is a member of the American Medical Association and the Southern Medical Association.

Civic services have been rendered freely by Dr. Cantwell. In 1936 he was one of the Democratic Presidential electors from Maryland. He was State

Senator for two terms and aided in getting a full time Health Office for Cecil County. He served as Health Officer from 1918 to 1922 and actively supported inoculation that greatly reduced the incident of typhoid in his own community.

During World War I, he was commissioned a first Lieutenant, but was not called to service, and he served on the local draft board. In World War II he was director and consultant for the Triumph Explosive Company and was a member of the Maryland Procurement Advisory Board. He served sixteen years as a member of the Board of Directors of the Eastern Shore State Hospital.

Baseball has been an associated interest all of his life, for he played at Tome Institute which he attended at Port Deposit, Maryland, and for the University team after enrolling at the University of Maryland in 1902. During the summers he played semi-professional ball. Now his baseball is the spectator's role.

A private surgical practice still takes much of his time; but he is able to give more of his time than in years past to his family and to his host of friends.

PRINCE GEORGE'S COUNTY MEDICAL SOCIETY

HANS WODAK, M.D.

Journal Representative

The Society, in accordance with its annual practice, has awarded another three-year \$300.00 nursing scholarship to one of our deserving high school graduates. The recipient of this year's award was Miss Katherine Mason, of Cheverly, Md. Miss Mason has chosen the Duke University School of Nursing at Durham, N. C.

There has been considerable agitation in our Society for more dinner meetings after we had one on a trial basis. The Prince George's Golf and Country Club is located centrally, and after a detailed questionnaire the Society has decided to have dinner meetings from time to time. Those who desire to attend please send their check for \$3.00 to cover the cost of the meal. The business meeting will take place an hour after the dinner is scheduled and that way those who do not wish to attend the latter can come to participate in business affairs without incurring the dinner charge. Ultimately we expect to have every such meeting conducted this way.

At our last meeting there was an especially interesting scientific program presented by Drs. Samuel Sugar, Leon Levitsky and T. Bergamann. The topic was "Oral Hypo-glycemic Agents in the Treatment of Diabetes." After a question and answer period which lasted almost as long as the presentation of the topic, our meeting adjourned at 10:30 P.M.

Before the membership went home they agreed that our annual banquet and dance will be held Saturday, December 1, at the Prince George's Golf and Country Club. Dr. John W. Perkins, of Rogers Heights, Md., heads the committee that will make all the arrangements. Dr. Perkins tells us that he has scouted far and wide to employ suitable talent to make this a truly gala event.

NIH ANNOUNCES SENIOR RESEARCH FELLOWSHIPS FOR MEDICAL SCHOOLS

The AMA Washington Letter, No. 84-86

A senior research fellowship program designed to attract and hold investigators in the preclinical sciences has been announced by the National Institutes of Health at Bethesda, Md. The program this year provides for a total of 40 to 50 awards to the nation's medical schools, dental schools, and schools of public health. NIH said that in five years it will be awarding as many as 250 fellowships annually.

At the same time, PHS's National Institute of Neurological Diseases and Blindness announced funds are being made available to medical schools to strengthen existing clinical programs in advanced training in the neurological diseases. The purpose is to stimulate the interest of more young physicians and scientists in careers as teachers and investigators. Training grants also are available to basic science departments to expand postdoctoral training programs in the neurological sciences.

STATE, LOCAL GOVERNMENTS SPENDING HIGH IN HEALTH SERVICES

The AMA Washington Letter, No. 84-87

Next to education and the building and maintenance of highways, health services are the largest single expense item in spending of state and local governments. U.S. Census Bureau figures disclose health spending in 1955 was \$3.6 billion. Public Welfare spending which also includes an undetermined amount of health expenses totalled \$3.1 billion. The health expenses were twice as much as government administration and seven times the money spent on recreation. The Census totals include: education, \$11.9 billion; highways, \$6.4 billion; police and fire, \$1.9 billion; government administration, \$1.4 billion; interest, \$838 million; natural resources, \$793 million; parks and recreation, \$509 million; housing and re-development, \$499 million; air and water transportation, \$310 million. The health services are divided into \$2 billion for hospitals, \$1.1 billion for sanitation and \$470 million for other health items.



Library



"Books shall be thy companions; bookcases and shelves, thy pleasure-nooks and gardens." *ibn Tibbon*

LIBRARY CHATTER

LOUISE D. C. KING

Librarian

The Library is used by a few, over and over again, while the greater number of our members never darken our doors. Obviously, this is not due to lack of interest in professional literature, else Maryland would not have the fine medical reputation it enjoys, but rather it must be due to lack of knowledge of our resources, and their availability to all Faculty members.

Our Library is comprised of over 75,000 volumes, composed of a good basic collection of journals and texts. We subscribe to 349 journals, plus a number of transactions and proceedings received regularly, and each year we purchase a carefully selected number of textbooks. There must be many journals and books which you would like to read, but do not

feel justified in purchasing. Why not suggest their purchase or subscription, if the item desired is not already on the shelves? The Library Committee will make every effort to see that it is added to our collection, where it will be available to you and others.

As far as we know, there is not another library in the country, certainly not in Maryland, which allows unbound journals to be borrowed for one month. Why not write to have one or two mailed to you, or drop in and take a few home for perusal at your leisure? If you are pressed for time, borrow an issue of *Excerpta Medica*, and read abstracts of important articles printed in both domestic and foreign journals on the particular field of medicine in which you are interested.

Let's get better acquainted; you will find it very much worth your while.

PHS ANNOUNCES PUBLIC HEALTH AND NURSE TRAINEESHIPS

The AMA Washington Letter, No. 84-86

Public Health Service is making available about 250 traineeships for graduate or specialized training of professional public health personnel. Congress voted 1 million dollars for the program (P.L. 660) for the current fiscal year. Another 500 traineeships from a \$2 million appropriation are being offered for graduate nurses in administrative, supervisory and teaching positions under the same law.

PHS said the 250 traineeships are designed to bring new and younger people into public health through postgraduate training opportunities. Preference will be given to men and women under 35 and only under exceptional circumstances to those over 45. Eligible are physicians, sanitary engineers, nutritionists, medical social workers, dentists, health educators, veterinarians and "others whose professional skills are required in modern public health practice."

Also stressed by PHS: (1) traineeships may be awarded directly to individuals by the service or through grants to teaching institutions, (2) applications available at regional PHS offices or from Chief, Division of General Health Services, Bureau of State Services, PHS, Washington 25, D. C., (3) after this year, deadline for applications will be April 1. Nurse traineeships are available through 47 schools of nursing and four schools of public health.

Health Departments

BALTIMORE CITY HEALTH DEPARTMENT

The New Tuberculosis Control Regulation

In a recent *Saturday Letter to the Mayor*, the Commissioner of Health of Baltimore reported as follows on the newly adopted tuberculosis control regulation for the City:

"A most important health event of the week was the adoption on Wednesday of the following control regulation, now effective, pursuant to the City Communicable Disease Control Ordinance, Sections 215-218 of Article 12 of the City Code of 1950:

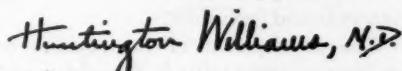
Regulation 3. Control of Tuberculosis. Any person having tuberculosis dangerous to the public health and in a communicable or potentially communicable stage, shall forthwith upon receipt of notice to that effect from the Commissioner of Health place himself or herself under the care of a licensed physician for prompt and adequate treatment in a hospital or at home, and in writing advise the Commissioner of Health the name of such physician, and shall continue to receive such medical care until the physician giving the treatment shall certify to the Commissioner of Health that such person is no longer dangerous to the public health; or such person shall be quarantined and isolated in a tuberculosis ward or a tuberculosis hospital and shall remain in such isolation until discharged by the hospital authorities with the approval of the Commissioner of Health.

The need for the new regulation has become apparent for other methods of persuading the occasional "rock bottom recalcitrant" infectious tuberculosis case to avoid exposing family or associates to the disease have failed.

A similar regulation for the recalcitrant infectious venereal disease case was adopted in Baltimore under this ordinance on August 24, 1945, and has proven very effective. For the counties of Maryland,

and for many other cities and states there are like legal controls.

Very truly yours,



Commissioner of Health"

Can Maryland Maintain Adequate Water Supplies and Sewerage Facilities for Its Growing Communities?

During the past five to eight years, Maryland has been confronted with unprecedented problems of providing water supply, sewerage and other community facilities for a tremendously accelerated growth of residential housing. Especially severe problems are presently confronting Montgomery and Prince George's Counties in the vicinity of the District of Columbia, and Anne Arundel and Baltimore Counties surrounding the City of Baltimore. This is true to a somewhat lesser degree of the area in the vicinity of Ocean City in Worcester County, and of the Georges Creek area in the vicinity of Cumberland in Allegany County. There are abundant indications of a similar acceleration in those areas of Harford County bordering U. S. Routes 1 and 40. Similar severe problems are confronting authorities of counties of Virginia to the north and west of the District of Columbia. Maryland is by no means unique in having to contend with such problems but we believe that some of our difficulties are intensified by actions of the Federal Government in decentralizing certain agencies into Maryland in the interests of the national defense.

The National Security Agency was located on the Fort George G. Meade Military Reservation within the past eighteen months, precipitating a residential development crisis in the adjoining area of northern Anne Arundel County. The Atomic Energy Commission has acquired a site for an office installation at Germantown, Maryland. The same has been done by the Bureau of Standards in the vicinity of Gaithersburg. Also to be located in

this vicinity are the Weather Bureau and the Coast and Geodetic Survey. The Bureau of the Census is already located at Suitland, Maryland, in Prince George's County. Since the sites chosen for these agency relocations are essentially undeveloped, substantial satellite growth of residential communities can be expected to take place. Experience has shown that people tend to avoid driving long distances to and from work.

The development of the satellite or "fringe" residential community is the major problem with which we are faced in attempting to provide adequate water supply and sewerage services. The initiation and growth of these communities are influenced by very strong social, economic and political forces. Efforts to control or direct effectively the nature of development are tremendously difficult when they run counter to such influences. Indeed, these are the forces which produce the major obstacles for local official planning bodies. They must be dealt with effectively if organized planning processes and controlled land use patterns are to be developed.

A major consideration which must be met in constructing modern residences is the disposal of greatly increased volumes of household sewage. The only satisfactory way of disposing of domestic sewage in the modern community is by means of public sewers with subsequent treatment and disposal through an adequate sewage treatment plant. Modern communities without number, however, are dealing with problems of the greatest difficulty as a result of attempts to dispose of domestic sewage through the long recognized inadequate and unsatisfactory process of utilizing a septic tank and seepage pit or tile field for the individual premise.

The septic tank system to serve the individual residence was developed more than a half century ago as a means of permitting the installation of a water-carried sewage system in the isolated rural residence. Use of septic tanks as a means of meeting sewage disposal requirements in communities was first attempted in the early 1900s with a recognized lack of success. In succeeding years, efforts were made to eliminate septic tanks in such communities and install sewers, in order to correct difficulties presented. These lessons of experience, however, have been long forgotten or brushed aside, since developers of modern housing, subsequent to World

War II, have literally gone overboard in community development entirely dependent upon the septic tank for sewage disposal. Such systems, however, prove to be anything but an accommodation to the householder and the community in which he resides and, sooner or later, develop into an economic burden for both the householder and his community.

In order to minimize nuisance values, some authorities have advocated the greater dispersal of developments utilizing septic tanks by requiring larger size lots. The boomerang effect of such requirement is being experienced in numerous areas, however, where unsuitable soil conditions make it impossible to provide correction for inoperative septic tank systems and large lot areas with proportionate frontages subject to sewer tax assessment render it economically prohibitive to extend sewers to serve the areas. Unfortunately, this unpleasant and often bitter lesson of experience is being constantly disregarded in the development of fringe area housing.

In consideration of such problems, it would be simple to say that the answer is to be found in the development of public sewers and sewage treatment plants. This is not entirely the case, however, since rather frequently the disposal of even treated sewage presents problems where sufficiently large receiving bodies of water are not available. The problem in upper Montgomery County, Maryland, is a striking example of this. Germantown, Maryland, where the Atomic Energy Commission office facilities will be located is situated in the Seneca Creek watershed. Seneca Creek has been tentatively reserved as a future source of water supply for the Washington Suburban Sanitary District. Seneca Creek also discharges into the Potomac River above the point at which the intake of the Washington water supply is located. For the kind of residential development which is anticipated in the Germantown area, to utilize septic tanks would be manifestly unsatisfactory. To develop local sewage treatment facilities would necessitate discharge of treated sewage into Seneca Creek and, consequently, into the Potomac River in an area providing a prime source of public water supply.

The upper Montgomery County problem is the same as that with which Anne Arundel County authorities are attempting to deal in the Patuxent River watershed around the Fort Meade Military

Reserve. This same pattern, developing as a natural course of events but uncomplicated by Federal agency location, is taking place in most sections of the Baltimore County Metropolitan District, in Worcester County, to the north and west of Ocean City, and in Allegany County in the Georges Creek area west of Cumberland. Up to the present only limited progress is being made in the way of constructive land use planning, zoning and building control to provide an organized pattern of development.

The necessity for planning in these areas is strikingly urgent. Needs go far beyond those represented by sewage disposal and water supply which are now

providing the grave difficulties with which the State Board of Health must cope. Each day's decisions or indecisive actions in development of residential housing in areas uncontrolled by orderly planning compound those problems which in the future will confront our State and county governments.



Director

FEWER PERSONS ON RELIEF BUT SPENDING UP, HEW REPORTS

The AMA Washington Letter, No. 84-88

The States and the Federal government spent a total of \$2.79 billion for public assistance during the year ending June 30, an increase of \$66.9 million over the year before. Despite this, the number of persons on rolls declined by about 69,000. The Department of Health, Education, and Welfare, in making the figures public, gave these reasons for the increase in costs:

First, states provided more medical care for persons on the rolls; second, there was "substantial development" of the program of aid to the totally and permanently disabled; and third, many states increased monthly payments to recipients.

HEW's Bureau of Public Assistance made no breakdown of direct payments for medical care to public assistance recipients, although for the previous fiscal year total medical expenditures exceeded \$210 million. Under the Social Security amendments passed by the last Congress a new category for medical payments has been set up, effective July 1, 1957. This will add substantially to the medical bill under public assistance.

STATE OF MARYLAND DEPARTMENT OF HEALTH
MONTHLY COMMUNICABLE DISEASE REPORT

Case Reports Received during 4-week Period, October 1-25, 1956

	CHICKENPOX	DIPHTHERIA	GERMAN MEASLES	HEPATITIS, INFECT.	MEASLES	MENINGITIS, MENINGOCOCCUS	MUMPS	POLYMYXITIS, PARALYTIC	POLYMYXITIS, NON-PARALYTIC	ROCKY MT. SPOTTED FEVER	STREP. SORE THROAT INCL. SCARLET FEVER	TYPHOID FEVER	UNDULANT FEVER	WHOOPING COUGH	TUBERCULOSIS, RESPIRATORY	SYPHILIS, PRIMARY AND SECONDARY	GONORHEA	OTHER DISEASES	DEATHS	
Total, 4 weeks																				
Local areas																				
Baltimore County	27	—	6	—	2	1	8	1	—	—	4	—	—	—	—	13	—	2	m-1	3
Anne Arundel	3	—	—	1	—	—	—	—	1	—	—	—	—	—	—	1	1	1	m-1	1
Howard	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	2	—	—	—
Harford	1	—	—	—	—	—	—	1	1	—	—	—	—	—	—	4	—	—	—	2
Carroll	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	m-1	t-1	5
Frederick	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	10	—	1	—	—
Washington	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	3	—	1	—	2
Allegany	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	3
Garrett	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	1	—	—	—	—
Montgomery	2	—	—	—	—	—	18	—	1	—	3	—	—	1	—	4	—	—	—	2
Prince George's	1	—	3	—	—	—	9	2	—	—	2	—	—	—	—	3	—	4	m-1	2
Calvert	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	—	—	—	—
Charles	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	1	m-1	2
Saint Mary's	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	1	—	—
Cecil	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	5	—	—
Kent	—	—	—	—	—	—	—	1	—	—	2	—	—	—	—	—	1	—	—	—
Queen Anne's	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Caroline	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	3	—	1	—	—
Talbot	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dorchester	2	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	1	1	—	—
Wicomico	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	1	—	5	—	1
Worcester	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Somerset	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Counties	38	0	9	3	3	1	39	10	3	1	13	0	1	0	51	6	26	—	23	—
Baltimore City	15	1	11	1	15	0	42	7	1	0	14	0	0	0	76	13	521	—	14	—
State																				
October 1-25, 1956	53	1	20	4	18	1	81	17	4	1	27	0	1	0	127	19	547	—	37	—
Same period 1955	28	1	11	17	33	2	52	32	18	0	31	0	0	14	156	25	589	—	36	—
5-year median	34	2	6	15	39	2	41	68	1	35	3	2	41	169	18	614	—	40	—	

Cumulative totals

State																				
Year 1956 to date	2508	2	1099	82	9260	44	2688	71	16	15	697	15	7	119	1670	210	5824	—	549	—
Same period 1955	2110	12	466	312	1531	23	1523	147	97	22	2217	19	0	331	1674	170	6128	—	515	—
5-year median	3077	15	678	323	5597	52	1997	239	—	32	1386	25	20	430	2035	183	6095	—	505	—

m = meningitis, other than meningococcus.

t = tetanus.



Woman's Auxiliary Medical and Chirurgical Faculty



MRS. GERALD W. LEVAN, *Auxiliary Editor*

NATIONAL CONVENTION REPORT

MRS. E. ELLSWORTH COOK, JR.*

The annual convention of the Woman's Auxiliary to the American Medical Association was held in Chicago, June 11 to 15, 1956, with headquarters at the Conrad Hilton Hotel.

Registration was 1,042 with representatives from every component auxiliary, including Alaska and Hawaii. Guests also registered from Australia, Panama and South Africa.

The Convention schedule began on Monday, June 11, 1956, at 9 A.M. with a Round Table Discussion on Legislation, Organization and Membership, Bulletin, Public Relations, Today's Health, and the American Medical Education Foundation. On Monday afternoon, there was a tea in the Crystal Ballroom of the Sheraton-Blackstone Hotel honoring Mrs. Mason G. Lawson, President, and Mrs. Robert Flanders, President-Elect of the A. M. A. Auxiliary.

On Tuesday, June 12, at 9 A.M. the Convention formally opened with Mrs. Lawson presiding. The Invocation was delivered by His Eminence, Samuel Cardinal Stritch, Archbishop of Chicago. The Roll was called by the Constitutional Secretary. Maryland was represented by six delegates. A most impressive "In Memoriam" service was conducted. The address of the President followed as did those of her officers. Mrs. Frank Gastineau, Chairman of the A. M. E. F., proudly announced a check for \$106,222.26 from the A. M. A. Auxiliary to be presented to the A. M. E. F. The morning session adjourned after the reading of the state reports of the Western Region. A Luncheon was held in honor of the Past-Presidents of the A. M. A. Auxiliary, with Mrs. Lawson introducing the guest speaker, Mr. Leonard E. Read, President, Foundation for Economic Education, Incorporated, who spoke on "The Positive Approach to Combatting Socialism." The afternoon session opened with the reading of the Southern Region state reports. The

reports of the Standing Committee Chairmen of Finance, History, Legislation, Organization, and Program followed. Mrs. Jay Linn, Finance Secretary, reported the dues totalled \$74,189.00, of which ten per cent, or \$7,418.90, must remain in the treasury, leaving a balance of \$66,770 to be budgeted.

Following the reading of the state reports of the North Central Region, there was the first reading of the Nominating Committee Report.

A Reception and Ball in honor of the President of the American Medical Association was held in the Palmer House at 10 P.M.

On Wednesday, June 13, the morning session was opened with the reports of the Committee Chairmen of Publication, Public Relations, Revisions and Today's Health. The Eastern Region of state reports were read next, with Maryland's Report among those from this region. Mrs. Homer U. Todd, Sr., President of the Woman's Auxiliary to the Medical and Chirurgical Faculty of Maryland, reported on the many accomplishments of the Auxiliary in the past year, stressing our many Future Nurses Clubs, the Student Aid Fund, and contributions to the A. M. E. F.

The reports of the Chairmen of Special Committees of: Bulletin, Civil Defense, Mental Health, Nurse Recruitment, and Reference concluded the morning session. At 12:30 P.M. a Luncheon was held in honor of Mrs. Lawson and Mrs. Flanders in the Grand Ballroom of the Conrad Hilton. Dr. Elmer Hess, Immediate Past President of the A. M. A., was the guest speaker.

Wednesday afternoon, Mrs. Flanders presided at the Round Table Discussions of Civil Defense, Program, Mental Health, and Nurse Recruitment.

The morning session on Thursday, June 14, consisted of the Election of Officers, Installation of Officers, presentation of the President's pin and gavel by Mrs. Lawson to Mrs. Flanders who then gave her Inaugural Address. The Convention adjourned with the reading of the minutes. At

* State Delegate.

7:30 P.M. the Annual Dinner Dance was held, with Miss Ilka Chase as the guest speaker.

The 1956 Convention closed on Friday, June 15, with a Conference of National Officers, Directors, and Committee Chairmen with State Presidents and Presidents-Elect, with Mrs. Flanders, President,

presiding. Mrs. Flanders is most anxious to inaugurate an Automotive Safety Campaign this year to help save the one million Americans killed or injured annually by automobile accidents. An educational program along this theme was suggested for each auxiliary.

THE MONTH IN WASHINGTON

AMA Washington Office

Washington, D.C.—Regardless of which party organizes the next Congress or who occupies the White House, health and welfare legislation promises to take up considerable time and attention of lawmakers. There is nothing to indicate that the general subject of health has lost its appeal either to the public in general or to men who run for political office in particular.

The national platforms on which the candidates of both parties have been campaigning are somewhat of a blueprint for the type of legislation to come in the 85th Congress, convening next January 3; generally, both parties advocate more rather than less federal participation in health and welfare programs. Here are some of the points in the two platforms:

Aid to Medical Schools—The Republicans recommend "federal assistance to help build facilities to train more physicians and scientists" as a supplement to action of the 84th Congress authorizing federal grants to schools and other groups for laboratory research facilities. The Democrats state: "We pledge ourselves to initiate programs of federal financial aid, without federal controls, for medical education."

Aid to Hospital Construction—The Republican plank: "Republican leadership has enlarged federal assistance for construction of hospitals." The Democratic plank: "We pledge continuing and increased support for hospital construction programs."

Medical Research—Republicans: "We have asked the largest increase in research funds ever sought in one year to intensify attacks on cancer, mental illness, heart diseases and other dread diseases." Democrats: "We shall continue to support vigorously all efforts, both public and private, to wage relentless war on diseases . . . We commend the Democratic party for its leadership in obtaining greater Congressional authorization in this field."

Vocational Rehabilitation—Republicans: "We have fully resolved to continue our steady gains in man's unending struggle against disease and disability." Democrats: "We pledge support to a vastly expanded rehabilitation program for these physically handicapped, including increased aid to states."

Medical Care—Republicans: "We have encouraged a notable expansion and improvement of voluntary health insurance, and urge that reinsurance and pooling arrangements be authorized to speed this progress." Democrats: "We pledge . . . increased federal aid to public health services, particularly in rural areas."

Social Security—Republicans: "We shall continue to seek extension and perfection of a sound social security system." Democrats: "By lowering the retirement age for women and for disabled persons, the Democratic 84th Congress pioneered two great advances in social security . . . We shall continue our efforts to broaden and strengthen this program by increasing benefits to keep pace with improving standards of living, by raising the wage base upon which benefits depend and by increasing benefits for each year of covered employment."

Notes

Further evidence that federal aid to medical schools will be high on the agenda of the next Congress is the survey under way by the staff of the House Interstate and Foreign Commerce Committee. More than 50 organizations have been sent letters requesting background facts on financial needs of medical schools and the demand for medical school applicants "rather than arguments intended to support or oppose any particular form of federal aid." The information is being gathered as a preliminary to hearings in the next Congress.

Public Health Service announced the availability of 250 traineeship grants for graduate or specialized training of professional public health personnel under the newly enacted Health Amendments (Omnibus) Act. Emphasis is on bringing new and younger people into public health, men and women under 35 years of age. Congress voted \$1 million for the program this year. Another 500 traineeships from a \$2 million appropriation are offered for graduate nurses in administrative, supervisory and teaching positions.

While Defense Department officials were putting the finishing touches on regulations to carry out the military dependents medical care program, the State Department was working on its own version of a program for furnishing care to about 13,500 dependents of Foreign Service personnel stationed overseas. In most instances, medical and hospital care (with a \$35 deductible clause) will be supplied in U. S. military installations.

To aid Defense in setting up fee schedules for military dependents using private physicians and facilities, state medical societies in cooperation with the American Medical Association have been asked to supply data on prevailing medical care charges.

New chief of the PHS Communicable Disease Center at Atlanta, Ga., is Dr. Robert J. Anderson, a career PHS officer who has been serving as assistant chief of the division of special health services.

COMING MEETINGS

DECEMBER 1956*

Organization	Time	Date	Place
Baltimore City Medical Society	8:30 P.M.	Friday, December 7, 1956	Annual Meeting, Osler Hall, 1211 Cathedral St.
Woman's Auxiliary to the Baltimore City Medical Society	8:00 P.M.	Friday, December 7, 1956	Library Floor, 1211 Cathedral St.
Cancer Section, B.C.M.S.	To be announced	To be announced	National Cancer Institute Bethesda, Maryland
Neuropsychiatric Section, B.C.M.S.	8:30 P.M.	Thursday, December 13, 1956	1211 Cathedral St.
Maryland Society for Obstetrical and Gynecological Society	6:30 P.M.	Thursday, December 13, 1956	Dinner Meeting, Stafford Hotel
Pathology Section, B.C.M.S.	To be announced	Monday, December 17, 1956	Sinai Hospital
General Practice Section, B.C.M.S.	9:30 P.M.	Thursday, December 20, 1956	1211 Cathedral St.
Joint Committee on Maternal Mortality—City Health Dept. and B.C.M.S.	4:00 P.M.	Thursday, December 27, 1956	1211 Cathedral St.

* All meetings are held in the Medical and Chirurgical Faculty Building, 1211 Cathedral Street, Baltimore, Md., unless otherwise designated.

SEARS-ROEBUCK FOUNDATION

The American Medical Association has for the past two years been cooperating with the Sears-Roebuck Foundation in a program which it is hoped will supplement the latter's placement service efforts in providing improved medical care where there is the greatest need.

The Foundation makes an annual grant of \$125,000 which is placed in a revolving fund and made available to physicians desiring to establish practices or to improve existing facilities. The primary objective is to improve medical services and facilities in suburban and rural areas. This grant will be continued for a period of ten years providing there is an actual need for the program.

A Medical Advisory Board of the Foundation, appointed by the trustees of the A.M.A., screens all applications for loans available from this fund. These Board members represent various geographical areas and may be called upon for assistance and advice regarding the loan program.

The interest rate ranges from zero to six per cent over a ten year period depending on the rapidity of repayment. There is no charge for administration of the program as this is met by additional Foundation Funds.

To date the Foundation has made 22 loans, affecting 33 physicians, in 13 states, totaling \$172,000. Loans have gone to general practitioners, specialists, partnerships, and medical groups. So that applications may be processed efficiently, there are two cut-off dates—October 1st and April 1st. Applications received prior to October 1st will be decided upon no later than December 15th. Applications received between October 1st and April 1st shall be decided upon no later than June 15th.

MINE WORKERS MEDICAL CARE COSTS UP FROM PREVIOUS YEAR**AMA Washington Letter, 84-89**

Reversing a three-year trend, medical care costs under the United Mine Workers Welfare and Retirement Fund increased during the fiscal year ending June 30. The Fund's annual report issued September 6 noted hospital and medical care expenditures amounted to \$47,502,629.88 or about \$5 million more than the previous fiscal year. This is explained in part by the opening of a three-state network of 10 hospitals operated by the Miners Memorial Hospital Association.

The Fund provided 1,530,430 days of hospitalization for 89,824 beneficiaries including dependents. Medical and surgical services for these hospitalized cases entailed 1,460,030 visits by physicians. Additional services of specialists through 825,126 office and out-patient clinic consultations were provided.

During the 12 months, the Fund provided rehabilitation to 15,082 beneficiaries, 14,102 of them miners. Of this group, 3,441 were able to return to some useful occupation, 852 to mining. The 10 area medical administrators who operate under Dr. Warren F. Draper, executive medical officer of the Fund, referred 1,701 cases to vocational rehabilitation agencies.

The report states: "The 10 area medical administrators and their staffs fully recognize the role of rehabilitation in the medical care efforts of the Fund. Participating physicians and hospital personnel see cases formerly considered hopeless and helpless respond to constructive assistance through the full utilization of available services and cooperate with the rehabilitation efforts of the Fund's medical service. . . . As experience is gained, it is hoped that total patient care, which is rehabilitation at its best, can be achieved for every physically disabled Fund beneficiary."

Total spending by the Fund during the year amounted to \$127,662,715, of which 97% went to 206,919 beneficiaries for pensions, medical care, disaster relief and other benefits. The balance went for administrative costs, including Washington office expenses.